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VOL. XIII. NO. 1.

JANUARY 1, 1885.

PEACE • ON • EARTH • A • GOOD • WILL • TO • ALL • MEN



CLEANING
IN

BEE CULTURE

DEVOTED
TO
BEEKEEPING

PUBLISHED SEMI-MONTHLY,
AT
MEDINA, OHIO
BY
A. I. ROOT

TERMS, ONE DOLLAR PER YEAR.

Jos E Pond

ENTERED AT THE POST OFFICE, MEDINA, OHIO, AS SECOND-CLASS MATTER.

ADVERTISEMENTS.

We require that every advertiser satisfy us of responsibility and intention to do all that he agrees, and that his goods are really worth the price asked for them.

Rates for Advertisements.

All advertisements will be inserted at the rate of 25 cents per line. Nonpareil space, each insertion; 12 lines of Nonpareil space make 1 inch. Discounts will be made as follows:

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A. I. ROOT.

CLUBBING LIST.

We will send GLEANINGS—
With the American Bee-Journal, W'y (\$2.00) \$2.75
With " " " " M'y (.50) 1.25
With the Bee-keepers' Magazine, (1.00) 1.75
With the Bee-keepers' Guide, (.50) 1.40
With the Kansas Bee-keeper, (1.00) 1.90
With the American Apiculturist, (1.00) 1.75
With all of the above journals, 7.00

With American Agriculturist, (\$1.50) 2.25
With the British Bee-Journal, (1.40) 2.25
With Prairie Farmer, (2.00) 2.75
With Rural New-Yorker, (2.00) 3.00
With Scientific American, (3.20) 3.50
With Ohio Farmer, (1.25) 2.00
With Fruit Recorder and Cottage Gard'r, (1.00) 1.75
With U. S. Official Postal Guide, (1.50) 2.25
With Sunday-School Times, weekly, (2.00) 2.25

[Above Rates include all Postage.]



Beekeepers Supplies
WHOLESALE & RETAIL.
E.T. Lewis TOLEDO OHIO.
11-9d

CHAFF HIVES CHEAP.

I will sell chaff hives all complete, made of good lumber, Root's pattern, painted two coats, for \$2.50, lower frames included. Same in flat, \$1.50. Five per cent discount on orders for 10 or more. Simplicity and Langstroth hives at lowest rates.

A. F. STAUFFER, STEELING, WHITESIDE CO., ILL.
23-21d lmo

HEADQUARTERS FOR

Early Italian & Cyprian Queens.

Imported and home-bred; nuclei and full colonies. For quality and purity, my stock of bees can not be excelled in the United States. I make a specialty of manufacturing the Dunham foundation. Try it. If you wish to purchase Bees or Supplies, send for my new Circular containing directions for introducing queens, remarks on the new races of Bees, etc.

Address
11td Dr. J. P. H. BROWN, Augusta, Ga.

Cash for Beeswax!

Will pay 26c per lb. cash, or 28c in trade for any quantity of good, fair, average beeswax, delivered at our R. R. station. The same will be sold to those who wish to purchase, at 32c per lb., or 36c for best selected wax.

Unless you put your name on the box, and tell how much you have sent, I can not hold myself responsible for mistakes. It will not pay as a general thing to send wax by express.

A. I. ROOT, Medina, Ohio.

BARNES' FOOT-POWER MACHINERY.



Read what J. I. PARKER, of CHARLTON, N. Y., says:—“We got with one of your Combined Machines last winter 50 chaff hives with 7 in. cap, 100 honey racks, 200 bread frames, 2,000 honey boxes and a great deal of other work. This winter we have double the amount of bee hives, etc., to make and we expect to do it all with this Saw. It will do all you say it will. Catalogue and Price List Free. Address—W. F. & JOHN BARNES, No. 68 Ruby street, Rockford, Ill.

When more convenient, orders for Barnes' Foot-Power Machinery may be sent to me. A. I. ROOT.
5ftd

Oldest Bee Paper in America—Established in 1861.

AMERICAN BEE JOURNAL,

WEEKLY, at \$2.00 a year.

MONTHLY EDITION, 16 pages, 50c. a year.
925 West Madison Street, Chicago, Ill.

Bee-Hives AND Sections!

NEW SHOP AND NEW MACHINERY.

The Largest Manufacturer of Bee-Hives, Sections, etc., in the World.

Our Capacity now is a Carload of Goods Daily.

DECIDED.

The courts have decided the patent on the One-Piece Section to be null and void, for want of novelty. We are now manufacturing them again as first placed on the market by Lewis & Parks.

Write for our new price list for 1885.

G. B. LEWIS,
19td WATERTOWN, - WISCONSIN.

COMB FOUNDATION MACHINES

\$10.00 TO \$50.00.

SAMPLES OF FOUNDATION FREE, OR WITH
OUR ONE-POUND SECTION BOX BY
MAIL FOR FIVE CENTS.

For illustration see our Illustrated Catalogue of Apian Implements and Supplies, mailed on application.

A. I. ROOT, Medina, O.

WANTED. PURE HONEY
In Exchange for
SIMPLICITY HIVES IN THE FLAT.
Address
C. W. COSTELLO,
23-24d Waterboro, York Co., Me.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND
RETAIL. See advertisement in another column.

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Obituary.

We are pained to notice the death of our old friend F. N. Wilder, of Forsyth, Ga. He was one of the old friends of GLEANINGS, and has been an enthusiastic and successful bee-keeper, widely known in his vicinity. His last letter, if I am correct, is found on page 402, June number. He was about 36 years of age, and an earnest and consistent member of the Methodist Church since his 19th year. It is said of him that he has never, during his whole married life, failed to have family prayers.

Great peace have they which love thy law, and nothing shall offend them.—Ps. 119: 165.

KIND WORDS FROM OUR CUSTOMERS.

OUR FDN. AND FDN. MILLS.

Your 10-inch foundation machine received in good order. We have tried it, and the bees have tried the foundation. All parties are well satisfied.
Columbus, Wis., June 6, 1884. SMITH & MORGAN.

THE WIRE-IMBEDDER FOR PUTTING FDN. INTO WIRED FRAMES.

Just in time, the nice wire-imbedder came to hand to-day. I am well pleased in the prompt way you have of doing business. W. RIGGEN.
North Salem, Ind., June 7, 1884.

SOME KIND WORDS FROM MY OWN PASTOR.

I thank you for your Christian and sensible article in the Nov. "Homes." May God grant that it may become more and more the habit of Christians to take their religion into their conflicts with troublesome boys or men rather than their firearms.

Medina, O., Nov. 21, 1884.

C. J. RYDER.

OUR EXTRACTORS IN ARKANSAS.

The extractor was a "dandy" and a show in the county—the only one in the county. The people crowded in, to see the honey taken out without injuring the combs, till the house was full in every room. If I had charged an admission fee I could have gotten my money back. WM. DRAKE.
Colt Station, Ark.

SOME KIND WORDS FROM AN A B C SCHOLAR.

Well, we are closing up another year. I began dealing with you last spring in a small way, but my apiary is growing, and so are my ideas. If my prosperity keeps up I shall soon be a customer worth looking after. I began in the spring of 1884 with one small colony of beautiful Italians. My apiary has grown to 11 at this writing, and I have purchased only one, a full Italian swarm, for which I gave \$4.00. I have 9 of my colonies in chaff hives, which I made myself, after the instructions given in the A B C book, on a buzz-saw I constructed myself. But after making those 9 hives I recognized the truth of your statement, that it takes a superabun-

dance of muscle and enthusiasm to run one of them; or, as an old fellow put it who was looking at me while at work, "It takes a heap o' trompin'." Allow me to say, that my success is due to the accuracy of your directions in your book. I suppose there was not a day during the whole summer that I did not pay the closest attention to them. My neighbor constantly prophesied I would kill my bees, and I could get him to open his hives only after the utmost urging. Result, I have grown from one to 11; he has grown from 7 to 9, and I have had to keep constant watch to keep my bees from robbing his. My honey crop was short, because of the excessive drought. And now, allow me to thank you for the prompt and honest attention you have given my orders, and to hope that I shall be able to deal with you for long years to come. Honestly and sincerely your friend,
C. M. ROBERTS.

Chillicothe, O., Dec. 11, 1884.

Names of responsible parties will be inserted in any of the following departments, at a uniform price of 20 cents each insertion, or \$2.00 per year.

\$1.00 Queens.

Names inserted in this department the first time without charge. After, 20c each insertion, or \$2.00 per year.

Those whose names appear below agree to furnish Italian queens for \$1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen is reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delay as may be unavoidable.

Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with *, use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for \$1.00 before July 1st, or after Nov. If wanted sooner, or later, see rates in price list.

*A. I. Root, Medina, Ohio.

*H. H. Brown, Light Street, Columbia Co., Pa. 1tf

*Paul L. Viallon, Bayou Goula, La. 1tf

*S. F. Newman, Norwalk, Huron Co., O. 1tf

*Wm. Ballantine, Sago, Musk. Co., O. 1tf

*D. G. Edmiston, Adrian, Len. Co., Mich. 2tf

*Dr. John M. Price, Tampa, Hillsboro Co., Fla. 5-3

*S. G. Wood, Birmingham, Jeff. Co., Ala. 1tf

*Jos. Byrne, Baton Rouge, E. Baton R. Co., La. 7-5

*W. W. Turner, Oak Hill, Greene Co., N. Y. 7-5

*S. C. Perry, Portland, Ionia Co., Mich. 2tf

Will True, Chadwell, Clatsop Co., Oregon. 9-7

Jas. O. Facey, Tavistock, Ont., Can. 1tf

*D. E. Jacobs, Longley, Wood Co., O. 1-23

Hive Manufacturers.

Who agree to make such hives, and at the prices named, as those described on our circular.

A. I. Root, Medina, Ohio.

P. L. Viallon, Bayou Goula, Iberville Par., La. 1tf

Apiarian Supply Co., Wilton Junction, Mus. Co., Ia. 3-1

C. W. Costellow, Waterboro, York Co., Me. 21-19

Kennedy & Leahy, Higginsville, Lafayette Co., Mo. 21fd

F. A. Snell, Milledgeville, Carroll Co., Ill. 1-13

Something New.

Hive with reversible section-cases, also Simplicity Hives, the same as A. I. Root makes them, at Root's prices. Send for circular and price list to

KENNEDY & LEAHY,
Box 11, Higginsville, Lafayette Co., Mo.

TESTED QUEENS, \$2.00. Untested, \$1.00. 4-frame nuclei, \$3.50 and \$4.50. Mississippi wax-extractor, \$3.00, OSCAR F. BLEDSOE, Grenada, Miss. 3tf

HONEY COLUMN.

CITY MARKETS.

NEW YORK.—*Honey*.—We beg to inform you that our market is well stocked with comb honey, with an unsatisfactory demand for same, even at the following low prices:

Fancy white clover, in 1-lb. sections, per lb.,	16@18c
" " " 2-lb. "	14@16
Fair to good white, in 1 & 2 lb. "	13@15
Fancy buckwheat, in 1-lb. "	10@11
" " " 2-lb. "	9@9½
Ordinary grades, in 1 & 2 lb. "	No demand.
Extracted, white clover, in kegs or small bbls.,	8@8½
" " " buckwheat, " " "	6@7
Beeswax, prime yellow, per lb.,	31@32

McCAUL & HILDRETH,
31 Hudson Street, cor. Duane St.,
New York City.

Dec. 19, 1884.

CINCINNATI.—*Honey*.—There is nothing very encouraging in the market. Supply is good of comb and extracted honey; and while the retail demand is fair for the latter, it is slow for comb honey. Demand for extracted honey from manufacturers, is very dull. Prices range low, caused not so much by large supplies as by the low price of sugar, adulterations, and stagnation in the manufacturing business. Choice comb honey in 1 and 2 lb. sections brings 15@16c per lb. on arrival, and extracted honey, 6@9c. *Beeswax*.—Arrivals are slow, with a good home demand. Good yellow brings 28@29c on arrival.

CHAS. F. MUTH,

S. E. Cor. Freeman and Central Avenues,

Dec. 24, 1884.

Cincinnati, O.

ST. LOUIS.—*Honey*.—There has been no change in extracted honey since our last report; only retail demand. Southern in barrels, worth from 5½ @ 6c.; in kegs, 7c. for choice; in cans, 10c., at retail. Very little demand for comb honey. White clover in one-pound sections, 17 to 18c.; in two-pound sections, 15 to 16c. per pound. Dark honey not wanted.

Beeswax.—Not much arriving; worth from 27 @ 28c.

W. T. ANDERSON & Co.,

Dec. 24, 1884.

104 N. Third Street, St. Louis, Mo.

MILWAUKEE.—*Honey*.—The honey market here is rather dull for this season of the year, and the supply fair, and quality of stock generally fine and in good order. Quote, White 1-lb. sections, 13 @ 14c.; white 2-lb. sections, 12 @ 13c.; extracted, in kegs, 8c., with package; in cans, 9c. *Beeswax*.—28 @ 30c. pure.

A. V. BISHOP,

Dec. 24, 1884.

142 West Water St., Milwaukee, Wis.

CLEVELAND.—*Honey*.—The honey market is very much neglected, scarcely any wanted. Prices are unchanged; best white 1-lb. sections selling at 15@16, second quality 13@14. Best white, in 1½ and 2 lb. sections, 14 cts. Extracted not salable.

Beeswax.—28 cts.

A. C. KENDEL,

Dec. 27, 1884.

115 Ontario St., Cleveland, Ohio.

KANSAS CITY.—*Honey*.—Market very quiet; little honey moving; prices lower—about 1 cent on 1-lb. sections 2@3 cents on 2-lb. sections. Extracted dull, 2@3 cents lower, with very little doing.

Dec. 22, 1884.

CLEMONS, CLOON & Co.,

Cor 4th and Walnut Streets, K. C., Mo.

DETROIT.—*Honey*.—The honey market is rather dull and well supplied. Good comb is quoted at 12@14 cents.

A. B. WEED,

Dec. 23, 1884.

Detroit, Mich.,

BOSTON.—*Honey*.—Our demand for honey is very light, and prices are off from 16@2 cts. per pound.

Dec. 23, 1884.

BLAKE & RIPLEY,

57 Chatham St., Boston, Mass.

300 Colonies of Bees for Sale,

Also 40 acres of land adjoining the city; good house, and plenty of good water.

ANTHONY OPP,

211tdb

Helena, Phillips Co., Ark.

DADANT'S FOUNDATION FACTORY. Wholesale and retail. See advertisement in another column. 3btfld

HEADQUARTERS

IN THE

SOUTH

FOR THE MANUFACTURE AND SALE OF

BEE-KEEPERS' SUPPLIES

The Only Steam Factory Erected in the South.

Exclusively for the Manufacture of Hives,

Frames, Sections, &c., &c.

Viallon, and Root Simplicity Hives, and Sections a specialty. the 4x4½ all-in-one-piece

Comb Foundation made on the Root and Dunham mill, of pure wax, and worked on shares.

Extractors, Smokers, Honey - Knives, Bee- Veils, and every thing needed in the apiary.

Italian Queens and Bees. No other races in my apiary or in the neighborhood. The superiority of the queens reared in my apiary is so well established, that no commendation is required. I send out no queen that I would not have for myself; and any one receiving a defective or worthless queen from me will have it replaced. Proposals from Dealers to mail a given number weekly, solicited.

Untested Queens in April, \$1.25; in May, \$1.15; in June and after, \$1.00. Rates per dozen given on application.

TESTED QUEENS from March 1st to July 1st, \$2.50; and after, \$2.00.

SELECTED TESTED QUEENS, Reared previous season, to breed from, \$3.00. All my queens are reared from selected imported mothers of my own importation, and from selected daughters.

Early 4-Frame Nucleus, With tested queen, \$5.00. I have made a specialty of the 4-frame nucleus for the last seven years, and have sent them out to all parts of the United States and Canada without loss.

Every Nucleus I send out contains at least three pounds of bees when received and sent out in the full-size Langstroth frame. They are cheaper and more advantageous than bees by the pound. Any one wishing a list of those to whom I sent nuclei the last season can have it on application, so they can inquire what they were, etc.

Full Colonies In any quantity. Perfect satisfaction guaranteed in every instance. For more particulars, and prices, send for my Descriptive Illustrated Catalogue. Cash market price for wax.

P. L. VIALLOON,

Bayou Goula, Iberville Parish, La.



Vol. XIII. JAN. 1, 1885. No. 1

TERMS: \$1.00 PER ANNUM, IN ADVANCE; 2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00, 10 or more, 75 cts. each. Single Number, 5 cts. Additions to clubs may be made at club rates. Above are all to be sent G. O. N. POSTOFFICE.

Established in 1873.
PUBLISHED SEMI-MONTHLY BY
A. I. ROOT, MEDINA, OHIO.

Clubs to different post-offices, NOT LESS than 30 cts. each. Sent postpaid in the U. S. and Canada. To all other countries of the Universal Postal Union, the price is extra. To all countries NOT of the U. P. U., 42 cts. per year extra.

NOTES FROM THE BANNER APIARY.
NO. 61.
FOUNDATION IN THE BROOD-NEST.

FRIEND ROOT:—You will remember that we discussed this question at the Lansing convention; but as many of your readers were not there, I will, with your permission, reply to your criticisms upon my article on page 801, Dec. GLEANINGS. You say, colonies with sheets of fdn., and with empty frames, have been tried side by side for years, and in thousands of apiaries, and the result was in favor of the fdn. You also speak of the excellent results obtained by hiving swarms upon empty combs, and extracting the honey. All this I admit; but, to my mind, these illustrations are not to the point. If a swarm is compelled to build *all* of its combs, both *store* and brood, there is no question in my mind but that it would be outstripped by a swarm furnished with fdn. or combs, but how will it be when the *surplus* department is furnished with fdn. or combs, and the bees allowed to build natural combs in the brood-nest? Have you, friend R., tried such an experiment, or do you know of any one who has? and if so, with what result? Prof. Cook offered an explanation of why I apparently secured more honey when no fdn. was used in the brood-nest, and the explanation is reasonable. He said the honey was stored in the sections to a greater extent, instead of in the brood-nest, when no fdn. was used in the brood-nest; and, as I did not compare the weight of the brood-nests in the fall, it is possible that the professor's explanation is the true one. This is the one weak point in my experiment. Another season I will try to make

my experiments more conclusive. Prof. Cook says bees do not secrete wax unless they have use for it; but, is it not possible that a newly hived swarm, during a good flow of honey, can secrete enough wax to fill their brood-nest, if given fdn. in the surplus department, more cheaply than we can buy fdn. for them? The best way that I know of to decide this question is by such experiments as I made last season; and if it is decided that more surplus is secured simply because less honey is deposited in the brood-nest, it should not be forgotten that this space in the brood-nest that *would have been* occupied with honey, had fdn. been used, has been occupied with *brood*, and that fall will find the hive full of bees instead of honey; the honey can be sold for a good price, and the combs filled with sugar syrup.

You say, "It seems to me, that instead of deciding we do not need fdn. or empty combs, we ought to decide that the method of management was not quite the thing." I do not think this a fair decision, and I think you will agree with me when I tell you that no other bee-keeper in this county, so far as I have learned, has received so large a yield *pro rata* as myself, while the commission men pronounced it the finest honey they have handled this season. One bee-keeper, living 2½ miles from here, began the season with about 36 colonies, and increased to about 76, but received only about 10 lbs. per colony of surplus. At the convention at Chicago, *only one* reported a better yield of comb honey than myself. In the face of this, do you think it would be fair to say, "The method of management was not quite the thing"? *Per contra*, in the fall I fed my bees 10 lbs. of sugar per colony, on an average, to prepare them for winter; but as the honey "squeezed"

from the brood-nest into the sections netted me, upon an average, 15 cts. per pound; the sugar needed to take its place in the brood-combs cost only 7 cts. per lb., and is a safer winter food than honey, do you think it fair, my friend, to say "the method of management was not quite the thing"?

This question of fdn. or no fdn. in the brood-nest is an important one, and I hope that a large number of experiments will be made another season. Let all remember, however, that when fdn. or combs are placed in the surplus department, and the brood-frames left empty, a queen-excluding honey-board is needed.

THE HEDDON FEEDER.

As I have used the Heddon feeders (30 of them) two years, and fed about 4000 lbs. of feed, part of it being honey and part sugar syrup, perhaps I may be allowed to answer your objections to it. They are such shape that they pile away quite snugly, 16 of them making a pile only 6 feet high; but, as they are painted, they can be piled up, out of doors, if there is no room inside. The cover is simply a board (the hive-cover) cleated at each end, so that it can not warp. I have never had a particle of trouble in this direction, and no weights are used to hold the cover down. The feed used is not thin, like water, and the pressure is not great enough to cause it to "spout" through the saw-cuts; it comes through them, and then down the side of the partition; at least, this is the way I should explain the matter, as I have never shoved the cover back far enough to see exactly in what shape the feed comes through; but I do know that I have never seen any daubed bees, or those that gave evidence of having been daubed, and I have never boiled the sugar syrup as mentioned by Mr. Heddon, simply having dissolved it with hot water, and it crystallizes quite badly until the bees get it into their cells. I do not think there are half a dozen dead bees in any one feeder, and they have been in use two years. To prevent the feeder from leaking it is only necessary to paint with white lead the edges of the pieces before putting them together. This feeder, and the grooved board to be used with a fruit-jar, are the only ones I ever thought well enough of to even try.

W. Z. HUTCHINSON, 68-94.

Rogersville, Genesee Co., Mich.

With the explanation given by yourself, and that of friend Cook at the convention, I have no doubt you are right in regard to the matter, friend H.; and in your remarks above you suggest one thing that I have often mentioned before, but I had not thought of it in connection with this matter; viz., that a new swarm of bees seem to do better where they have some comb to build than where they have all finished combs already furnished. I once urged this as a reason why we should not fill our section boxes completely. But your idea is a new one, of filling the section boxes completely, and letting the bees indulge their propensity for comb-building, and use the wax that exudes out of their bodies, in the brood-frames below. In the extract you make, however, from what I said last month, I now for the first time discover that the word *decide*, in the last part of the sentence, is not the one I meant to use. I simply meant to suggest that we could not decide any thing at present, and that before deciding, we should investigate your method of management, and see if it were just the

thing. Most of the friends who know me well, are aware that I often use a word that does not express exactly the meaning I intended, for the simple reason that the word I want does not just then occur to me. I had no thought of conveying the idea as you put it.—I am very glad to know you succeeded in making feed without boiling, because boiling does seem to me an unnecessary nuisance; not only a nuisance to yourself, but to your wife and family, unless a special stove be provided; and this special stove, in the hands of the average bee-keeper, is generally a pretty big nuisance. I am also glad to have so good a report from the feeder: for not having used it myself, I was not prepared to decide. You probably purchased your feeders and covers of friend Heddon, and I hope you will excuse me for still suggesting that the feeders and covers both be purchased of friend H., or of some supply-dealer who makes his work carefully, or there will be great trouble from leaking and warping covers.

THE MICHIGAN STATE CONVENTION.

WHAT I SAW AND LEARNED.

I STARTED one day earlier, in order to visit the State fish-hatchery at Sandusky. In order to make connections I had to ride on a freight train two or three hours. Three or four other individuals shared the rather dismal freight car during this long ride, and the slow monotony of the trip was improved by getting acquainted with each other. Some seemed disposed to talk, and talked quite freely, and others did not. I, for want of something better to do, fell to studying humanity. I had but little time to stop at Sandusky, I knew, and I was very anxious to find out where the State fishery was located, and therefore I asked every new comer as he came into the car if he was acquainted in Sandusky; and if so, did he know any thing about the fish-hatchery. Nobody knew any thing about it, nor had I ever heard of such a thing. One individual volunteered the remark, that he did not know much about German carp, but he did know something about feeding fish. He used to be connected with an eating-house on the dock by the lake; and the cook, in order to get rid of his slops, just hoisted it out of the window. Well, in due time a lot of voracious cat-fish learned to hang around the said window, for the choice morsels that came to them every time the table was cleared. These fish got so tame they would come clear up and hang around like a lot of pigs or chickens, for their daily meal. Pretty soon the cook took the hint and threw out a baited hook, and not only supplied the table with cat-fish, but presented his friends right and left with great whooppers for bakes. The narrator had one such, and the family voted it so delicious that he applied for another. This time they got a larger one still. But, oh dear me! in preparing him for the oven a great horrid dead wharf rat was found inside of the big fish. None of the family ever wanted any more of the cat-fish, and my friend said it sickened him for all

time to come of every thing belonging to the fish tribe. Is it not funny, what prejudice will do?

By this time a very genteel-looking man came in, and somehow his appearance seemed to rather forbid conversation. I finally decided, however, that I would see whether it were true that we can tell very much about a man by his looks. He admitted that he lived in Sandusky, and was pretty well acquainted, but answered so briefly that I was almost discouraged on the carp question. However, we neared the place, and necessity made me bold. Oh, yes! he knew all about the State fishery; had seen the little chaps wiggle about in the glass jars. It was down by the waterworks. He would show me the place; and after studying up the time of trains, decided for me that by close figuring I could get about twenty minutes for my visit at the fishery. I began to repent a little of my former uncharitable conjecture in regard to him; and when the train slacked up near the station, and he suggested we had better jump off and run, trusting to the chances of a street-car, I became a good deal ashamed of myself. A car had just left, and I slacked up my running, deciding that it was too nearly out of sight to leave any chance for catching it. He, however, with a shrill whistle, brought them up, even away off in the distance, got me into the car, pointed out the fine buildings of the city, told me of a short cut to take in going back, pointed out the hatchery, then nodded as he left me, without seeming to think he had done me any service at all; and yet without his kind assistance I should have entirely failed in my project, and a day's work would have been lost. I did thank him as well as I knew how, and I mentally resolved to try never again to be guilty of forming uncharitable impressions of people of whom I know nothing, for so silly a reason as that they look a little bit proud and aristocratic, under my countrified gaze. I feel ashamed of myself every time I think of it. What a foolish thing it is to think ill of a person you don't know! And, come to think of it, I do not know but it is ten times more foolish to be tempted to think ill of people around you whom you *do* know. May God have mercy upon me a sinner, and I fear a sad sinner right in this line.

The fish-building stood right on the shore of the lake, or bay, rather; in fact, it is partly over the water. Long vats inside remind one somewhat of a cheese-factory. In the center of the building were long rows of glass jars, perhaps several hundred of them. Each jar held, may be, three gallons. The jars are called the Chase automatic jar. Water drawn from away out in the lake, through the medium of the waterworks, comes into the building near the ceiling. It pours into the jars through a tube that goes to the bottom of the jar. Of course, this makes the water boil over. A lip to the jar then pours it into a tube that goes into the next jar, and so a gurgling stream of water goes through the jars constantly, day and night, for many months, and from there out into the lake. Well, these jars are filled with eggs of white fish in countless millions.

These eggs look like white pearls, about the size of common shot. Patiently the operatives watch and wait nature's time, for three or four long months. Then the eggs, even in this cold lake water, hatch out little fish, and the fish wiggle out up through the jars, and so out with the current into the lake, and Lake Erie is peopled with white fishes. Is it not wonderful?

They do not hatch carp in that way. Carp are hatched in ponds, as described in the different articles that have appeared. But along the vats, along the outside of the building, little carp of all sizes were swimming. The gentlemanly superintendent, Mr. Henry Douglas, scooped up a lot of them with a little net attached to a frame that just filled the vat. By pushing this down the center of the vat, and moving it toward the end, all the fish that could not go through the meshes of the net were pulled up at one haul. The fish did not seem to be troubled or alarmed about it. I picked up a mirror carp about the size of my hand, and he lay still while I admired him, as if it were the most natural thing in the world. How I did wish that Huber were there! He has lately learned to express his admiration or thanks by saying "nice." But he can not say the whole word, and so he just says "ni." When I feed him at the table, and give him something, he looks up with an appreciative twinkle in his blue eyes, and ejaculates "ni." So it is with an apple, or any thing else to admire. One day he put out his little fat leg, and giving it a pat with his soft hand said to me inquiringly, "Papa, ni?" Well, I presume the juveniles who will likely read this would have almost screamed with delight to have seen these little fishes.

By the way, as soon as I have begun to study carp, the whole finny tribes have become wonderfully beautiful and fascinating in my eyes. How can one ever appreciate the nice ("ni") things in this world unless he has looked into it and studied it and become intimately acquainted with it? During the past year I have learned to love most intensely quite a number of things that I never loved before. For instance, I love strawberry-plants, and I tell you I really feel a thrill of happiness every time I pass a garden with a pretty plat of thrifty, nicely cared-for strawberries. Well, when I cross a bridge a little beyond this garden, and catch a glimpse of the finny tribes gliding about over the gravelly bed, I feel another thrill of happiness. When I went over to the college farm with our good friend Prof. Cook, with a number of other bee-friends, to stay over night, there were several things that made me happy. One was a great cluster of poinsettia in the greenhouse, almost dripping with honey. We licked it out of the cup-shaped blossoms, and when we came around again there was another supply almost ready to be "licked" again. Friend Cook's young hopeful, "Bertie," was just getting crazy on poultry when I was there; and as that used to be my boyhood hobby, Bertie and I soon had many ideas in common. While they were hitching up to go back to the convention, Bertie and I and his little sister had a chase out around the barns

to find his golden game bantams. Well, they had wandered away, and we could not find them; but Bertie found a fresh-laid egg, a diminutive hen's-egg, of a faint orange tint, clean and spotless, and beautiful in proportion. I wanted the egg to show to Huber, more than I dared to tell; and the sight of that egg gave me another thrill of pleasure, and ever since that day I have felt an unaccountable love for poultry. I went and got my old poultry book, "An Egg Farm," and somehow every page seemed to give me a new thrill of delight, bringing back my boyhood days, and making me feel glad that I had now a very pretty lot of young pullets that might be laying if they only had better quarters. Well, I am feeling unusually happy this bright wintry morning; and one thing that I feel happy about is, that it is a beautiful sunshiny day; and after I get the printers supplied with copy, and my morning mail read, I am going to scrape acquaintance with our poor biddies, and see if I can not fix a place for them to lay. Huber and I will manage it, you know, and then he and I will gather the eggs, and won't we have fun? If they were not so far away, we would just carry a steam-pipe from the engine down there to warm up their quarters and cook their grain, boil potatoes, etc. Now, I have told you all about the Michigan State Convention, except the bee part of it, and this article has got to be so long that I think I will tell that next time. Lest somebody should complain that I have talked so much about this visit, we have put in four extra pages, as you will notice. I usually get talkative in the month of February, and find myself obliged to put in a leaf or two; but the spell seems to start earlier this winter. I do not know where we shall be by February, if I do not wind up; so, good-by until next time.

Oh yes! Before I close this paper I must tell you one other little circumstance. After I started home from Lansing, the bee-keepers who happened to be on my train of course knew me; and after we had gone a few miles a man of about my age came and introduced himself, and pretty soon asked me to come over to the other end of the car, where his wife was. I pretty soon discovered that, if I did not know them, they knew all about me. They were Mr. and Mrs. O. J. Bedell, of Kawkawlin, Mich. They have taken GLEANINGS almost since its commencement, and I soon realized they were not sorry either, by the kind compliments they paid it. They have succeeded with their bees, and their success has been mostly due to GLEANINGS. Now, I do not wish to have you think that they follow all my directions because they said that. They do not use the Simplicity hives nor frames, but a frame that friend B. contrived, after a notion of his own. The way he makes his honey-boxes is so unique that I think I shall have to tell you all about it. He goes out into the woods and hunts up a nice straight-grained pine-tree, just to suit him. This is cut, and made into plank. The plank is then cut off into bolts just as long as his sections up and down. Then these bolts are sliced up with a circular saw so as to have pieces

about $\frac{1}{2}$ inch thick, $4\frac{1}{2}$ inches long (that is, for Simplicity sections), and $14\frac{1}{2}$ inches wide. You see, it is a strip of board, as it were, with the grain running crosswise; and not only must the grain run crosswise, but it must be straight across, so you could take a knife and split up this board into strips, and have the strips split right square across, every time. These pieces are for a series of section boxes, something on the plan of the "Farmer" honey-box, only it does not have saw-cuts where the box has to be split. The top and bottom bars of the sections are, if I remember correctly, pieces sawed from $\frac{3}{4}$ -inch lumber, and thick enough to hold a nail. With some wire nails the thin boards are nailed into the end of the top and bottom bars, and these top and bottom bars are, from center to center, the width you wish to have your sections; that is, if you want 2-inch sections, you nail them 2 inches apart from center to center; for $1\frac{1}{2}$ -inch sections, $1\frac{1}{2}$ inches from center to center. Four of these long series of section boxes cover the top of the hive, and when they are filled they are carried to the grocery in that shape, and the grocer with his penknife splits off one section, or two together, or three, as the customer may wish. The wood being nice and straight-grained, as I have explained, they usually split pretty easily and true. Of course, no separators are used.

I can not remember how many bees friend B. keeps; but he took a little book out of his pocket, and showed me how much money 40 acres of wheat had brought him this season. I think it was somewhere about \$600. Right below he had added up his honey, and the honey had brought more money than the 40 acres of wheat. "Yes, Mr. Root," said he, "my honey crop has for a good many years brought me more money than all the rest of my farm together."

During the talk his wife shyly ventured the remark, that she had often heard her husband say he would give more to see me, and have a good talk with me, than with any other man in the world. And there I had been sitting all by myself in that car, and, I fear, holding myself aloof from the rest of the world, from a sort of foolish bashfulness, and, in fact, making myself so hard to get acquainted with that this good friend had to take some little pains before I could get it into my head that it was in my power to make them very happy by being sociable and friendly, just as I am here at home. There are seven juvenile Bedells in that Michigan home, and very likely they, too, have learned to love GLEANINGS. Mrs. B. made the remark, just before they had to leave the train, that she turned to the Home Papers the first of any thing in the journal. Said I, quickly, "With your family of seven children you are both united to some of our various churches, are you not?" But they were obliged to admit that they were not. I can not remember what friend B. said here, but it was something to the effect that he believed in Christianity and in the Savior, as I had presented it through the Home Papers. Is it really true, that such sacred responsibilities are resting on my poor self—that through me others are catching glimpses

of eternal life and the home beyond? If so, may God in his great mercy help me?

HEDDON'S FEEDER.

IS NOVICE FAIR?

BRO. ROOT:—Are you not mistaken or unfair, or both? You ask us to, and I will criticise you kindly. Our feeder-bottom is not "grooved" at all. Every thing is decently fitted, and solidly and plainly nailed together. About three in a hundred leak, and these we exchange and fix up, and that ends it. You say that my feeder seems to be a large Simplicity feeder. Now, this is not just, for inasmuch as they are alike, the Simplicity is a small Heddon feeder. Over 12 years ago, and I think before I ever heard of warbling-slots in which to put liquid feed where bees could get it and run no risk of drowning, I made these very slots, and used them for open-air feeding. Very soon after, I made, used, and sold feeders with these same slots, with reservoir at the side, and entrance at the bottom, operating throughout on the same plan as does the one shown on page 834, only it covered only one-fourth part of the hive, and was all in one piece. That feeder was made, used, and sold years before Mr. Gray invented the Simplicity, was it not? And if I understand your Simplicity cut and description in your circular, you come in contact with the bees when refilling. That we do not, I consider a very important point. I, too, used a glass cover, but used a wood cover over the glass, to shut out light. I am opposed to feeding at the entrance. I don't think any one will practice it, after using a good top feeder. You also say we leave a " $\frac{3}{4}$ " space between the climbing partitions. No, it is only about $\frac{1}{4}$; $\frac{3}{4}$ would be too large. All $\frac{1}{4}$ spaces will admit of the passage of bees at one time and one place, through it. A bee crawls back down as well as back up. This $\frac{1}{4}$ space "over the scant partition" is also a $\frac{1}{4}$ space under the cover, and more bees than five swarms would contain would never crowd this passageway.

"OBJECTIONS."

That these feeders take up some room is true of any feeder, and they dispatch work in a greater proportion than they take up room, as compared to other feeders. One feeder will feed ten different colonies, in a fair season of time. No trouble about warped covers. We don't make a cover that will warp badly enough to let in a bee. Another point is, we don't let our colonies "get a going" robbing; and if they did, they would never raise a light cover—at least, our covers are "light," and I never yet saw one rise, and in two instances by a new hand putting on old, rejected, and warped covers (of a style we do not use), the bees did get started pretty well on two feeders; but by closing the crack with our regular covers, all was again harmony; for, get in at the top they *couldn't*, and that had attracted their whole attention, so they never tried the entrance. This is one reason why I so dislike feeding at the entrance. We know by experience, that warping covers are not one particle of objection.

Now, about the food "spouting up," and rising and daubing the bees. I have tested this a few times by removing the cover and watching the action, and I never yet saw a bee get his back wet. I have seen a few with their legs and under-side wet;

but of the hundreds of feedersful we have fed, we have never seen one bee that looked honey-soaked, and this is more than we can say of any of the other feeders we have used much.

Dowagiac, Mich., Dec., 1884. JAMES HEDDON.

I don't quite see where the unfairness is, friend H. I said it seemed to me it was a large Simplicity feeder with additions, etc. I used the Simplicity for illustration, because everybody knows the principle of it. The Simplicity was first made by myself, and not by Mr. Gray. I supposed by the looks of the joints, that the bottom was grooved on to the sides and ends, so I shall have to give your workmen credit for making good joints. Feeders made of wooden boxes nailed together have so often given trouble, sooner or later, that I do not believe I shall want to use them. It was mainly for this reason I started making the Simplicity of a single block of wood grooved out with a gang of saws. Very likely your covers do not make trouble by warping, but I think it is because the workmanship is done under your own eye; but where covers are made in that way by the generality of mechanics, or even bee-hive manufacturers, I should think there would be a good deal of trouble in order to get the stiff rim to hold the cover-boards from warping, or getting on a twist.

INTERNATIONAL BEE-KEEPERS' CONVENTION

At the Exposition in New Orleans, Feb. 21, 25, and 26, 1885.

SOME SUGGESTIONS TO THE BEE-KEEPERS IN REGARD TO GETTING THERE.

AS it would be pleasant, if not profitable, for a lot of us to make this journey together, I have desired my friend Mr. Holmes, whose business is in this line, to tell us something about going all together. As there are low local rates at which tickets are sold from almost every neighborhood, the only way in which the thing can be managed is to have us meet in Cincinnati, say on Monday evening, Feb. 23. If we take the train then we shall reach New Orleans on the morning of the 25th. Of course, it would be desirable to be present on the 24th; but to do this we shall have to make the trip the week before, or travel on Sunday, either of which would be undesirable, for myself at least; but I submit the matter to the friends. In regard to the return trip, I for one wish to visit the Mammoth Cave, as alluded to in the postscript. Below is the letter from Mr. Holmes:

A. I. Root, Esq.,

Editor *Gleanings in Bee Culture*:

Dear Sir:—Allow me to call your attention to the Louisville & Nashville Railroad as a direct and very pleasant route for the bee-keepers of the United States and Canada to take when they go to New Orleans in February, to hold their convention, and visit the World's Fair and Cotton Exposition, starting from Cincinnati, and passing through Louisville, Nashville, Decatur, Birmingham, Montgomery, Mobile, and along the Gulf Coast to New Orleans. All railroad companies sell tickets via the L. & N.

R. R. via Cincinnati or Louisville; and if you can set the day to center in Cincinnati, and there are enough in the party to do so, I shall be pleased to reserve a sleeping-car for the bee-keepers from Cincinnati to New Orleans, which costs six dollars for a double berth, or twelve dollars for a section each way, or I can charter a car for you at one hundred and thirty dollars from Cincinnati to New Orleans, and you can divide the expenses pro rata between you all. By sleeping two in a berth, the car will accommodate 48 people; or one in a berth, 24 people, and this would certainly be the most pleasant way. You could all go to New Orleans, and get well acquainted; you can leave Cincinnati at 8:55 in the evening, and reach New Orleans the second morning at 7:50—a nice hour to arrive in a strange city. By their sending their names to you I will register them as received, and they would get their sleeping-car berths accordingly; but they must be sure their tickets read Louisville & Nashville R. R. from Cincinnati or Louisville to New Orleans. Any further information furnished upon application. Very truly yours—

HERMAN HOLMES,
Traveling Passenger Agent.

Medina, Ohio, Dec. 25, 1884.

P. S.—Those desiring to do so within the limit of their tickets, can stop off at Cave City, and visit Mammoth Cave on their return trip. H. H.

While I think of it, it seems to me every bee-man should wear a badge. I know a good many of us rather dislike this idea of advertising ourselves and our business. But when I attended our convention in Michigan I rode several long hours in the same car with at least two different bee-friends who were very anxious to see me, and I did not know them, and they did not know me. I have felt badly about it ever since. I do not see how we can find each other out unless we wear a badge. I did think once of standing up in the car and asking if any bee-men were present; but that would be a little out of my way of doing business, even though it might have been quite an accommodation to the friends mentioned. Let us hear from you who are expecting to go.

BEE CULTURE IN FLORIDA.

A VARIETY OF QUESTIONS, AND FRIEND HART'S ANSWER TO THE SAME.

QUESTION.—Will it pay for a man owning bees in the North to ship them to Florida, instead of purchasing there, if he intends to permanently locate South?

Answer.—If a fair price can be obtained for your bees there, it will not, as they can usually be got here at \$1.50 to \$7.00, according to strain of bees, quality of hive, and condition of colony.

Q.—When is the best time to ship, and would it be safe to ship in December?

A.—Sept., Oct., Nov., April, or May. I would not ship from there in December.

Q.—Could one who is an expert in the North, and can handle 200 swarms successfully for extracted honey, do as well with the same number of swarms in Florida, or would he have to learn so much about the climate, seasons, etc., as to diminish his yield?

A.—He could probably handle as many swarms in some parts of the State as he could North, after he

had got posted as to the honey-flows. Where he had plenty of black-mangrove bloom I think he would be compelled to keep less bees, or hire help, although his crop would probably be larger.

Q.—As you have no cold winters (which are a dread to me), what is the chief cause of loss of bees with you?

A.—I have not lost a colony of bees for years, except that two or three went to the woods two years ago. Death of the queen at a time of year when we are not watching the bees closely, has been the cause of losing two or three colonies in years past. In that case, simple neglect was the cause. We have all the enemies, and none of the diseases of other sections. The mosquito-hawk seems to be the worst one, as it catches many young queens while out to meet the drones. Notwithstanding all the enemies, my bees are always strong, and always have given good results; 130 pounds average per colony being my lowest in seven years.

Q.—When do bees swarm there?

A.—In March, April, May, and July. It is usually easy to prevent swarming after May 1.

Q.—What is the soil of Florida?

A.—Most of it is poor and sandy; but as it is not "thirsty" or "leachy" it retains fertilizers well, and responds to them and to good cultivation wonderfully well. Our hammock (or hummock) lands are black and rich, and produce heavy crops of all kinds suitable to the climate.

Q.—What is the price of hive lumber, and is your pine suitable for hive-making?

A.—Good Southern pine, suitable for hive-making, costs \$22.00 per thousand at the mills. We also have some handsome woods suitable for sections, besides plenty of basswood.

Q.—Is there a factory for making hives and bee-keepers' supplies in your State?

A.—No. What we do not make ourselves, we order from Georgia or the North. W. S. HART.

New Smyrna, Fla., Dec. 12, 1884.

CIRCULARS RECEIVED.

For Chas. Kingsley, Benton, La., we have just printed a 4-page list of queens, fdu., etc.

A postal card price list has been received from Jesse H. Roberts, Keene, Wis. Comb fdu and queens a specialty.

We have lately printed for J. B. McCormick, Fredericksburg, O., some price lists of apiarian supplies, 4 x 6, tinted paper.

From J. W. K. Shaw and Co. Lenoireville, La., we have received a postal circular of the Home Apiaries of 200 colonies. Queens a specialty.

P. L. Vialton, Bayou Gault, La., has just ordered from our press his seventh annual price list of bees, queens, etc. The pages are the size of these.

A. T. Cook, of Clinton Hollow, N. Y., is having his annual seed catalogue printed here. It will go to press immediately after printing this number of *Gleanings*. The design is quite novel, and reflects great credit on friend C. Do not fail to send for one, if you want a good garden.

The Berlin Fruit-Box Co., Berlin Heights, O., send us a very interesting 4-page circular. Their specialty is sheet sections, and they are making splendid sections by the means, and are building up a fine trade. They claim to have wooden separators dried in a press, as nice and straight as tin. We have sent for samples.

Mrs. Cotton sends out a circular for the fall of 1884. It is much like former circulars. She still insists that bee-journals and supply dealers have a spite against her because she is doing so much business. Her prices are somewhat reduced, and the "drawings" that were shown up so fully last season are offered for only \$3.00. There is one clause in her circular that seems to me to have the right ring to it, and I hope that those who deal with her will follow it out to the letter. It is as follows, verbatim:

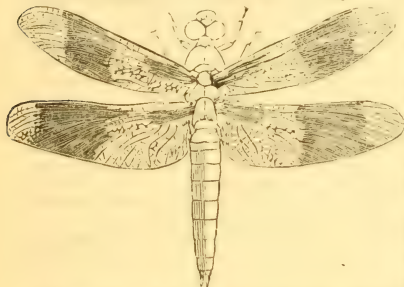
"NOW I appeal to the honest intelligent Bee-Keepers of the country to give their testimony. I EARNESTLY REQUEST each person who orders of me at any time anything offered in my circular, to write on a postal card their experience in dealing with me. Please state plainly and in as few words as possible, just what you think of what you have received for your money, and send the postal card to the publisher of the publication in which you saw my advertisement."

"PLEASE BE SURE TO REPORT AS REQUESTED, for by so doing you will aid the right against the wrong."

DRAGON FLIES.

WHERE THEY COME FROM, AND WHAT THEY DO;
ARE THEY DANGEROUS?

FEW insects are better known than the dragon-flies, or "devil's darning-needles." In nearly all countries, various absurd powers have been attributed to them, and they have received popular names. The Germans, more poetical, in this respect at least, than their American cousins, call them "Gauze-flies," or "Virgins of the water," while the French gallantly style them "Demoiselles." A noted entomologist has affirmed these insects to be "the very incarnation of ugliness, and the perfection of all that is hideous." If he refers to their immature stages he is doubtless correct; but, few species of insects are more distinctively beautiful than some of the dragon-flies in their perfect state. For dazzling metallic luster, what can surpass the eyes, wings, and body of the blue-green species which flits irregularly about the fields and woods in June and July?



OUR OLD FRIEND THE DRAGON-FLY, OR "DEVIL'S DARNING-NEEDLE."

The eggs of these insects are deposited just beneath the water of ponds, creeks, etc., on the stems of reeds, and other aquatic plants, being held by a kind of glue with which they are covered. The young dragon-flies which hatch are handsome only in the sense of "handsome is that handsome does." They are great tyrants, killing all weaker brethren, such as the larvæ of mosquitoes, flies, etc., which cross their path. These larvæ are very active, and have a peculiar apparatus in the posterior end of their body, which serves for both locomotion and respiration. By means of tubes, the surrounding water is alternately drawn in and forced out, a process which may easily be seen by confining one of the little "beasts" in a glass aquarium. After living a short time the larva becomes a pupa, a state which corresponds to the chrysalis state of the butterfly, except that the dragon fly pupa is active.

When ready to assume the winged state, the insect crawls above the water on some reed or grass-blade, and the back of its pupa skin soon splits, out of which the dragon-fly crawls, suns itself for some time, and flies away. Tennyson beautifully and accurately describes this phenomenon thus:

To day I saw the dragon-fly
Come from the well where he did lie.
An inner impulse rent the veil
Of his old husk: from head to tail
Came out clear plates of sapphire mail.

He dried his wings: like gauze they grew;
Through crafts and pastures wet with dew
A living flash of light he flew.

These adult dragon-flies are considered very beneficial, because they devour myriads of gnats, mosquitoes, and other "small game." Sometimes they vex the apiarist by pouncing, falcon-like, upon his honey-laden bees as they homeward fly; but this is only true of the larger species. When they are numerous, and destructive enough to do serious injury, they should be captured with a butterfly net—something, however, which is easier said than done. To catch them, stand still and try to cage them as they flit past you; do not chase them, as they will rise and escape. CLARENCE M. WEED.

Lansing, Mich., Oct., 1884.

The opening of your remarks, friend W., reminds me vividly of the stories I used to hear about these snake-feeders, as we called them. Whenever one buzzed around our heads, instinctively both juvenile hands were clapped over our ears, because we had been told they sewed people's ears up with that long darning-needle body of theirs. I know they are handsome, but their gaudy beauty is so suggestive of stinking ponds and streams that I do not believe I shall ever admire them as I might otherwise. I am glad to know more about them than I ever did before. The complaints of their preying upon the bees have come mostly from the South. I do not think they do it—at least not very much, here in the North. I have seen them in that queer operation of laying eggs under water, but I never understood it before. Of course, they have some kind of a water-proof glue to make the eggs stick, and one falls to wondering how it is that they make it work right straight along. If some man had invented such a craft, think of the years he would need for experimenting to get it to work right along every day, without getting "out of kilter." "How wonderful are thy works, O Lord!"

SOME KIND WORDS FROM TOUNGOO, BURMAH.

FRIEND BUNKER TELLS US SOMETHING ABOUT
THE BEES THERE, AND GIVES SOME ENCOUR-
AGING WORDS IN REGARD TO THE
WORK OF THE MASTER.

YOUR beautiful A B C book reached me in good season, and on a recent tour among the churches and schools I took occasion to read it, and I must say I have been intensely interested in it. Some parts I have read repeatedly, and with great profit.

In some respects your work (the spiritual part) reminds me of my own. I, too, have a great factory. I will try to send you a photograph of it by and by. In this factory I have at present 160 girls and boys, and we are laboring, by God's help, without which we fully realize that we can do nothing, to make these boys and girls over from heathen members of society into good citizens, and, better, into skilled teachers and preachers for the millions of their countrymen, all over these hills to our east and north, to Thibet. This work you can have as little idea of as I do of your bee-keeping and factory. We work through this school as a means of influence on the 70 odd churches and stations all over these hills. Every church has its school, and gets its teacher from this school. Now, I see you have an immense work to oversee. I like your system very much; without it you could not ask success of

the heavenly Father. I can understand your care, your solicitude for the men and women, boys and girls, under your care; for do I not experience it all in *my* factory? These churches and schools, all branches of the great factory, the home factory with all it means, enables me to see your care. But, friend Root, I think we have some cares you can hardly expect in your work. You have men more or less fitted to your hand. We get material from the wildest of nature's children. Sometimes I think that *gratitude*, as the name, has no place in the hearts and language of these peoples. Your noble helpers *help* you; and even the material *you* work on, I see, often remember you with thanks. But, did you ever think how hard it would be to labor on years without one "thank you"? The other evening, about 9 o'clock, as I was retiring to rest, all tired out, I discovered, providentially, that my whole factory of boys and girls, with a very few notable exceptions, had quietly packed up their books and clothes, preparatory to leaving secretly by moonlight, say 4 or 5 o'clock in the morning, and all because I had called the school to account for breaking a rule forbidding them to go out among the Burman heathen, where they would learn all sorts of evil, in the *evening* time; i. e., without permission from some of the teachers. There were orphans among this number whom I had saved from death by starvation, and had fed and clothed for years. There were boys who had been in the theological seminary at Rangoon, studying for the ministry. There were none of the whole company who had not received aid and love and kindness from us in many ways; yet in a sort of panic of evil-heartedness they were all ready to break up their school on the slightest provocation.

I may add, that there was not one who did not afterward acknowledge that he was wrong, and ask forgiveness for what he had done. Your blessed Huber cheers you after your work is done. Bless the boy! *my* darlings are in far-off America, and I have not seen them for over four years. But I won't say more, lest you think I am *complaining*, which I am not. I merely speak of these things so that you who have already shown so much kindness and thoughtfulness for this far-off worker may the more intelligently pray for us that our strength fail not.

Notwithstanding what I have said, and much more of the same sort, I believe that the spirit of God is able to lift this people; that the Holy Spirit can and does convert their souls, and will lift them into civilization. I may not see a great advance in my life; but it will come, for the "Lord hath spoken it." We here have to fall back and rest entirely on the promises, after working on in the dark for years; but the promises of God are yea and amen. I have been struck with the similarity of our work, after all. They touch in many points. Allow me to say, that that 10-minutes' prayer-meeting at noon in your establishment gives me more hope and joy than all else in the book. It is, by God's grace, the key-note to your whole work, and your success is sure.

As time permits, I have been sucking in bee-knowledge. Perhaps I shall get a little time in the opening of the honey-season here (after the rains) to experiment. For this purpose I have sent an order to you. I wish now I had ordered more hives. I had not then learned the price. It would cost me here five times as much to make a Simplicity hive

as it would to order from you in America, ordinarily. Carpenter work of a good sort is very high and very slow. At best it is poor. If I can start two or three of my best Karens in bee-keeping I can help them very much, and perhaps the art of bee-keeping in the country. I shall be happy to do good in any way I can. I am here for that purpose. I suspect I shall have to send you larger orders as I get experience. In any case, with God's blessing I'm bound to make this go.

You see, I've caught the fever, and such fevers run with me usually till I win success or decided failure. My letter in GLEANINGS has stirred up several to write to me for queens! They want them sent by express. Why, there is no express within hundreds of miles of where I am. To reach Rangoon, the nearest sea-port town, we must take a native boat, a very rude affair, and go by the winding river nearly 200 miles. This a hot sickly country, away back among the ages of the Philistines, save where English enterprise has pierced this gloom of ignorance and superstition. To get a queen from Toungoo, after we had her caught and caged, would cost hundreds, and perhaps, I had almost said, thousands of dollars to get her home safely. At least, it would take the salary and expenses of a skilled bee-fancier to get bees from Burmah to America.

By the way, I saw in a recent GLEANINGS, under the head, "Notes from Burmah," something like it, concerning bees in Singapore. The fact is, Singapore is some 600 miles south of the most southern point of Burmah. Burmah is divided into two provinces—upper Burmah, and English, or Southern Burmah, the most southern point of which runs down on the Malay peninsula as far as Victoria Point, opposite an island of that name, at lat. 10° north. The dividing line between Burmah and Siamese provinces is the water-shed running north and south. This line runs down the Malay peninsula to lat. 10°, when it turns to the west, and strikes the point above named. As to fact, I have yet to learn that there is one hive of bees kept in any scientific way in the whole province of Burmah. There are wild bees everywhere, and on a bright day their hum fills the air, and swells to a roar on the grand old trees covered with bloom, till they look like a bouquet of the giants, and sicken the air with the richness of the perfume.

There, I didn't intend to write so much when I began; but we see few of our kind, and it's a relief to talk to some one who can sympathize with us sometimes. This, of course, is not intended for publication.

A. BUCKER.

Toungoo, Burmah, Sept. 26, 1884.

Why, friend B., do you say, "Of course, not for publication"? Your letter has cheered and encouraged me greatly; and do you not know there are hundreds and thousands who read GLEANINGS who are toiling, many times amid darkness and discouragements, in the same way you and I are? Don't be afraid to let your light shine, my good brother, and don't be afraid to ask us to pray for you when you feel weighed down by many cares. We rejoice at the opportunity, and daily prayers go up from many homes where GLEANINGS goes; and I am sure these prayers will be as an amen to my own prayer, that God may bless you and your flock away off across the ocean. We are intensely interested in your little story; but I watched all through your letter to have

you tell us more about what kind of occupation you furnish to those under your charge. We know about the schools and churches; but, what industry or industries do you take up?

PREVENTING SUGAR SYRUP FROM CRYSTALLIZING.

SOMETHING ABOUT TRANSFERRING IN WINTER, ETC.

I HAVE just been reading an article in GLEANINGS on "Crystallizing of Sugar Syrup." I see it is claimed that it will crystallize—as a rule—only when made too thick. Further on, in the same paragraph, it is suggested that crystallization probably took place—in a certain instance—because "he put in too much sugar for the quantity of water."

So far I have found it impossible to thoroughly dissolve the sugar unless I use water enough to make the solution quite thin—too thin for feeding. Hence I can not succeed in making a syrup that will stay syrup, without boiling.

Years ago I worked in a candy-factory, and there I learned, that when transparent, or "crystal candy" was to be made, the sugar was boiled down from a thin solution, over a charcoal fire, without any kind of stirring. Now, I never had occasion to make the experiment, but I believe that, with some less boiling, this candy syrup would have remained syrup. Stirring the sugar until thoroughly dissolved, immediately after the water is added, has nothing to do with its crystallization; indeed, the sugar will settle to the bottom, and harden, unless it is thoroughly incorporated with the water by agitation of some kind. But, let it be remembered, after this point is reached it should be boiled without stirring, and, when done, left standing in the vessel in which it is boiled, until needed.

I have tried the "honey" by adding about one-sixth to the sugar; and I am well satisfied that it will prevent granulation—or crystallization—better than any thing else, and certainly without risk of injury to the bees.

Very good, friend G. But if honey effectually prevents crystallization, what is the use of going to the trouble of boiling it? Just pour boiling water on your sugar, put in the quantity of honey mentioned, stir it thoroughly, and there you have it, without taking the stuff near the stove at all. If I am not mistaken, your wife will be on my side every time.

One of my hives, containing a very strong colony, and having ten frames full of honey (mostly unsealed) was upset one night late in October, by a "nasty hog." That accident necessitated a careful overhauling of the contents of the hive, and the feeding of 12 lbs. of syrup, to make up the loss. But the colony seems to be none the worse now for the rough treatment.

December 5th I transferred a swarm of bees from a barrel, in which they had been keeping house since June last. I found not less than three gallons of bees, but almost no good honey in the combs, of which the upper half of the barrel was full. I have them in a twelve-frame hive in the cellar, and have given them 20 lbs. of syrup since they were transferred. To-day, Dec. 16, they are well and apparently happy in their new home. My bee-books and bee-journals gave me not even a hint as to whether

such a job might be done in December or not. But, the wise hen cackles *after* the egg is laid. You will probably want to hear about this transaction again next spring; and I may have cause to wish I had said nothing now.

J. D. GEHRING.

Parkville, Mo.

I think your winter transferring will turn out all right. Of course, we should like to have you report in regard to it; that is, if the bees you transferred die, and those that were not disturbed come out all right, it will be rather against winter transferring. I shouldn't wonder, however, if the colony that had the 20 lbs. of syrup in December would be ahead of the others. I do not think there is any difficulty about transferring in winter, if one understands his business.

A LOCALITY WHERE THEY LIKE HONEY-DEW.

SOMETHING IN DEFENSE OF THIS KIND OF HONEY.

FRIEND ROOT:—I am a constant reader of GLEANINGS, and like it very much. I have read many articles in it the last few years about honey. Now, we have not had the opportunity to study the matter closely, but take honey-dew as a gift from above, and like that grade of honey very much, and so do our customers. After buying it once they will call for it again. Three years ago our honey-dew honey took the second premium at the Inter-State Exposition at St. Joseph, the honey being in 10 lb. boxes, while the honey in competition was of different grades, and in one-pound sections. It was darker than clover honey, but was pleasant to the taste, and of fine flavor. If the aphides produce honey, do they not first eat it? If they puncture plants, and cause it to flow from the plant or tree so punctured, why is honey-dew found upon leaves of trees that produce a bitter instead of a sweet taste, as the oak-tree? Why is honey-dew found mostly on the topmost leaves of the trees, and not on the lower ones? Why do we never have honey-dew unless there is a great flow of honey from flowers? and why do we never have honey-dew unless accompanied by heavy dew? We think that the position taken in GLEANINGS in regard to honey-dew is detrimental to the sale of honey in general; for people don't like to eat "bug juice."

Bees have not done well here this season, scarcely yielding 20 lbs. to the colony; spring court. The basswood was an entire failure, as was also the goldenrod. Some colonies are short of winter stores, and will have to be fed. The spider plant produces honey from the first of July until the 25th of October, standing the dry hot weather and three slight frosts without checking the honey-flow.

MRS. J. W. THORNTON.

Stewartsville, Dekalb Co., Mo.

I do not think the aphides eat honey, my friend, but, rather, that they eat the leaves and suck out the juices by puncturing the bark. These juices and the foliage are perhaps largely made up of starchy matter, and the aphides convert the starch into sugar, and exude it. This exuded sweet substance falls on the leaves of the trees; and where it is on the topmost branches, I think we shall always find the aphides on the foliage above

it. I believe we have honey-dew honey here when there is no flow from the flowers at all, as has been the case this season, when the honey-dew came during the extreme drought. It needs the honey-dew or rain to soften up the dried-down saccharine matter so the bees can lick it up. May be you are right in thinking we had better stop calling it bug juice. There is a great difference in the quality of the honey-dew, and we have some around here who like it, and prefer it to any other honey—not enough, however, to make a market for it. A man was here yesterday with over 500 lbs. of beautiful-looking white comb honey stored in one-pound sections. I did not dare offer him even 10 cts. per lb. for it, for the reason that I have been unable to dispose of the whole of a 48-lb. case, although I sell it as low as 12 cts. per lb.

SUGGESTIONS IN REGARD TO AN APIARY, AND A SHOP FOR MAK- ING BEE-HIVES.

ABOUT SUCH AN ESTABLISHMENT AS EVERY SMALL
TOWN OR VILLAGE SHOULD CONTAIN.

FRIEND ROOT:—I send you by mail six cards, with some photographs on, of bees, etc., not to have engravings made, but as a sort of visit to you to this part of the country. If there is any thing in them that you wish to have engraved, you are welcome to do so. The cut of drone in GLEANINGS, Oct. 1, is a very good representation of the photograph I sent you, so I suppose it was made from it. I believe I am already paid, as I received a photograph of A. I. R. free by mail for my album about that time.

Careless bee-keepers in this neighborhood are losing some colonies by starvation, as the crop was short, and the bees kept breeding so much all through the season. JAS. A. NELSON.

Wyandott, Kansas, Oct. 28, 1884.

The engravings on the opposite page were suggested by some stereoscopic views kindly sent me by Mr. James A. Nelson, of Wyandott, Kansas. You see friend Nelson, in his letter above, says I may make what use of the drawings I choose. Well, I believe the two pictures are not very far from the photographs, but I have changed them a little in some of the details. I do not know whether friend N. lives in a village or a town or a city; but in looking at the pictures it occurred to me that every village could with profit afford something like the bee-hive shop shown. The machinery, indeed, could be run by horse-power, tread-power, wind-power, or, perhaps, best of all, a little two-horse-power engine. The engine, to be out of the way, can be in a sort of shop, or lean-to, against the building. A suitable opening in the wall should be provided at the proper place to push through shavings and refuse lumber. For safety in case of fire, I would have this opening closed by a swinging door, the latter being covered with tin, as well as the woodwork around the engine and boiler. The shop should be long enough to handle 16-foot boards nicely. There had better be two saw-tables—one for cut off, and the other for rip, although one table may be made to answer both purposes

for a time; in fact, by frequent change one table may be made to do almost all the work. For making sections, a gang of dovetailing saws will be needed; and if one-piece sections are to be made, it will take still another machine. The machinery should be chosen, of course, according to the amount of work to be done. If bee culture is in its infancy in your vicinity it would not pay you to make any great outlay to begin with. Now, the great secret of succeeding in business will be to have every thing that anybody may call for, in readiness to load up on the instant, in case your customer is in a hurry.

In the foreground we notice a friend who has probably loitered into this shop to see what is going on there. He naturally asks about honey; and probably somewhere in the rear of the shop, near the apiary, he has been shown honey nicely put up, neatly labeled, in tin pails of various sizes. May be some of them are out on the walk. He tastes it leisurely, after awhile takes out his pocket-book, and pays for a painful, such as he thinks will be needed for the family.

The man with the wheelbarrow owns a grocery, and he, too, has been attracted by the look of thrift and business that is seen around the establishment. He has taken a 48-pound case of comb honey, and also a combined crate holding a single tier of sections. The latter he has set up edgewise, as you will notice. If he has good luck he will come around with his wheelbarrow often, you may depend on it.

The fellow who owns the horse and wagon, and looks after the happiness of that nice little woman with a parasol, is a farmer. Said little woman took a shine to bee culture, as many a thrifty housewife does; and one day, when they were busy cultivating the corn, she spoke something as follows:

"James, our bees are doing so well I am really afraid they may possibly swarm; and you know you have not got those new hives that you promised to see about."

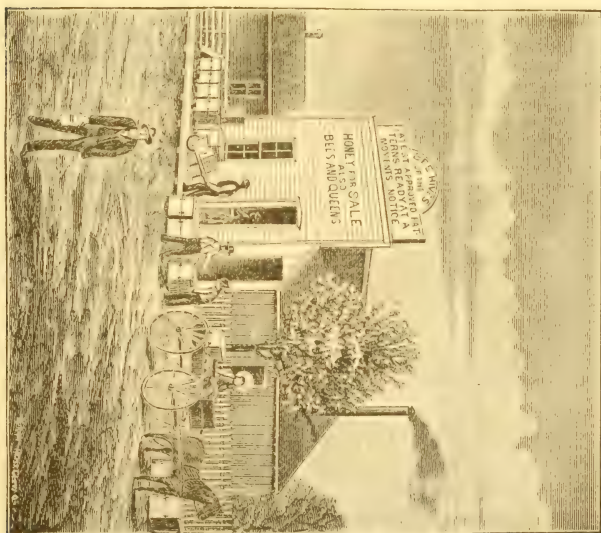
He stands with both hands straight down, looks anxiously at the corn-field, and then back to his trim little wife. She is a pretty good general, and knows how to manage not only bees but husbands, so she tips her shapely head a little to one side, and then with a smile she knows he can not resist, suggests, "I should really like to go to town this morning, and you know it would not take any more time now than after the bees have swarmed; and then may be they would be gone to the woods before you got back, if you did that way. It would take you but a little while, and I will be ready just as soon as you can get hitched up."

You see, the conversation has all been on one side. James, like a dutiful husband, just let her do the talking, and before nine o'clock this bright June morning there they are at the bee-man's establishment. I suppose he has got boys enough to run the buzzsaws while he sees to the hives, and loads them up; so there he is with his coat off, explaining matters. I do not quite see what is to be done with the little woman, if you put many more hives into that light spring buggy; but I guess they will fix it safely. When

VIEW OF THE APIARY IN THE REAR OF THE BEE-HIVE SHOP.



VIEW FROM THE FRONT OF THE BEE-HIVE SHOP.



two young people start out in the world to make a success of life they can get along a good deal cramped up for a little while, and they will also manage to get a good deal of stuff into one small wagon. Well, well; if they are agreed, we are.

Let us now look into the back yard. Although our bee-man is a hard-working fellow, he has had time to make friends with not only the grocery-keeper, blacksmith, harness-maker, and the rest of the mechanics of his town, but he is also on good terms with the doctor and lawyer. In fact, these two worthies have been long his best customers, and done much to introduce his honey. The minister has been among his customers too, even if he *didn't* pay for the honey in dollars and cents. Well, the people around town are so proud, the most of them, of the establishment in their midst, that when a distant friend comes to see them, they must take him over to see what is being done with bees. And that is the doctor now explaining to that chap with the cane, how this man is prospering and building up an honest business, while the neighbors around them tell stories at the grocery, and smoke their pipes. This doctor does not use tobacco. In fact, I have been told there are a good many of the doctors who are following in the wake of the young ministers. In setting a good example in the neighborhood they seek to lead.

Now, if this story is an interesting one to you, and you want to hear more of it, just go and visit the man who makes bee-hives, somewhere in your vicinity. While I think of it, suppose you just carry this journal along and show him these pictures.

DEMORALIZED SWARMS.

ANOTHER PLAN TO MAKE THEM STAY.

I SEE IN GLEANINGS, Nov. 15, Dr. P. G. Aldredge recommends caging bees that will not stay in the hive, and you seem to think his plan is a good one, and so it is, no doubt; and as I am not much of a bee-keeper I shall not pretend to say that it is not; but if you will permit me, I will tell you how I managed such a swarm for a neighbor, the past season. They were a swarm of blacks that had been brought from the woods, and transferred from a tree into a movable-frame hive. They did not like their new home, for some reason, and would not stay in the hive. They swarmed out, and were returned to the hive a number of times, and at last refused to enter the hive at all, but would run out and cluster on the outside. At last I was called to help conquer them, and this is the way I did it: I first sprinkled the cluster with sweetened water; then I spread them out on a large cloth, hunted the queen, and caged her in a wire-cloth cage. I now suspended the cage with the queen from the top-bars of the frames in the hive. Having done this I placed the cluster to the entrance, when they went in with a rush. In 24 hours I went back to see how they were doing, and found the workers busy at work. I now liberated the queen, and had no more trouble with them.

Now, I prefer this plan for several reasons. 1. Because it saves feeding. 2. Because it saves time to the bees; the workers being at liberty, they will not only make their own living, but a good swarm can, in a week's time, have their hive half full of comb and honey, which they could not do if they were confined to the hive as the doctor recommends. J. R. CRIDE.

Lagrange Center, Ind., Dec. 1, 1884.

MICHIGAN STATE CONVENTION.

A REPORT FROM W. Z. HUTCHINSON.

FRIEND ROOT:—As you prefer that convention reports should be simply a summing-up, I will send you such a report of the convention at Lansing. Any points that are brought out sufficiently in your editorial upon the subject you can, of course, drop from this report.

REVERSIBLE FRAMES.

The idea of reversing frames seems to be gaining ground. Reversal secures the attachment of combs to the bottom-bars, and, if done at the proper time, the removal of the honey from the brood-nest to the sections, where it can be sold for twice what it will cost to buy sugar to put in its place. Sugar is a safer winter food than honey. Reversal secures a large amount of brood in a small hive. No device for reversing, yet given to the public, is free from objections.

ONE ENTRANCE.

And that at the bottom of the hive, is sufficient, even when hives are two or more stories high.

STARTING BEES IN THE SECTIONS.

If a colony is disinclined to begin work in sections it can usually be started by giving it two or three sections, with the adhering bees, from some colony that has commenced work.

DISPENSING WITH SEPARATORS.

To dispense with separators, use sections not more than 12½ inches wide, fill them full of fdn., and don't give too much room in the surplus apartment. The only apparent advantage in sections less than 12½ inches wide is, that the honey is ripened and sealed sooner. One-pound sections appear to be the most profitable size to use at present.

THE HEDDON CASE

For holding sections on the hive received a regular "boom;" all who had tried them were enthusiastic in their praise. They can be used without a honey-board; but one is needed to keep the bees from building brace-combs between the sections and the brood-nest.

QUEEN-EXCLUDING HONEY-BOARDS

Are a convenience, and save much annoyance; but they can be dispensed with. If it is desirable to "squeeze" the honey from the brood-nest into the sections, or to have bees upon empty frames or fdn., and give sections at once, then they are needed.

SECRETION OF WAX.

Prof. Cook is positive that bees do not secrete wax unless they have use for it. He had, however, conducted no experiments exactly similar to those made by myself, but thought the increased amount of surplus apparently secured by not using fdn. in the brood-nest might have been the result of the honey being stored in the sections instead of part of it being put into the brood-nest. I shall try more conclusive experiments another season.

GETTING BEES OUT OF BOXES OR CASES.

Drive down as many as possible with smoke; if strong enough, shake out nearly all of the rest, and then carry the cases into a honey-house or tent, from which, the few straggling bees can escape through an opening over the window, or in the top of the tent. Another plan is to set the case down on end in front of the hive, and, with smoke and a bunch of June grass, drive out what bees remain. The "calling" of the bees at the entrance of the hive entices the bees from the case.

PREVENTION OF AFTER-SWARMING.

The Heddon method was described. It consists in having the prime swarm in a new hive upon the old stand, and setting the old hive a few feet to one side until the newly hived swarm is nicely at work, when the old hive is placed by the side of the new one, with its entrance turned to one side at an angle of 45°. Each day the entrance of the old hive is slightly turned toward the new hive until the hives stand in contact side by side. At the 7th day, move the old hive to a new location. If placed at the end of a row of hives there is but little danger of queens being lost.

CARNIOLAN BEES.

These resemble the German variety, are good workers, good comb-builders, very prolific, and inclined to swarm, and the gentlest bees known.

THE POLLEN THEORY.

That the consumption is the immediate cause of dysentery among bees, there is little doubt. Mature bees *do* consume pollen, even when not rearing brood. Analysis and microscopical examinations show the excreta of bees to be largely composed of pollen. Bees *do not* void their feces in a dry state. Dysentery has been produced by giving an abundance of pollen, and prevented by removing it in the fall. The most *practical* plan of preventing dysentery appears to be the removal of the honey and pollen in the fall, and the feeding of cane-sugar syrup; but that bees sometimes winter well with pollen in the combs should not be forgotten; perhaps we can yet learn how to induce them to let the pollen alone.

PROTECTION IN WINTER.

Lessens the consumption of stores, and the more perfect the protection the smaller will be the amount consumed.

"NOTES FOR THE YEAR"

Was an essay read by Prof. Cook. Some of its points have already been covered in the discussions reported above. Among other things, he said that many bee-keepers were unscientific, and many of their statements must necessarily be untrue; as, for instance, the assertion that worker larvae turned to drone, or that the tissues of a drone-larva could fecundate a queen by being placed in the cell of the latter when it was in a larval state. We are not yet ready to shout "Eureka" in regard to phenol as a remedy for foul brood. The crossing of different varieties of bees ought not to be discouraged; our best breeds of stock were developed from a cross. By means of fdn., drone-traps, and attention to the kind of bees kept in the vicinity, the matter of crossing bees satisfactorily is not hopeless.

STATISTICS.

Bees, honey, and wax are not among the products reported upon by the crop correspondents, and the executive board of the society was appointed a committee to secure the legislation necessary to have apianian products added to the list.

DISTANCE APART FOR HIVES.

As a general thing, hives need be placed no further apart than is necessary to give room for working among them. In a queen-rearing apiary it is more important that the hives or nuclei be scattered about promiscuously, than in one run for honey.

RAISING NICE HONEY.

Upon request, Miss Wilkins told how she and her sister raised the fine honey that they do. They used the finest white-poplar sections, which they thought important. They used the Doolittle hive and sys-

tem of management. The sections were removed as soon as finished, and all traces of propolis carefully scraped away. The source from which much of their honey was gathered (willow herb) had much to do with its fine appearance.

TAKING BEES FROM THE CELLAR.

When bees are taken from the cellar in the spring it is not necessary that each colony should be placed upon the same stand it occupied the previous season.

ALSIKE CLOVER

Had been cut just as it was beginning to blossom, with the hopes that it would again be in blossom just after basswood, but it did not start again; the drought might have been the cause.

There were, of course, many details and minor topics, not given in this short article; neither let it be supposed that *everybody* agreed with *all* of the above conclusions; but, as far as I was able to judge, the majority agreed with them, and in some instances the decision was nearly if not quite unanimous.

There will be no State convention held in 1885, but the society will meet in conjunction with the North American at Detroit.

W. Z. HUTCHINSON, 68-94.

Rogersville, Genesee Co., Mich., Dec. 22, 1884.

FLORIDA.

SOMETHING FROM NEAR FRIEND HART'S NEIGHBORHOOD.

OUR experiment in bee-keeping among the pines of Florida has now covered about one year, and we can tell a little better what to expect in the future. Seasons will vary here as in other places, yet the main source of honey supply will not change much. The first of last December we had fifteen nuclei, 13 pure Italians and 2 hybrid. Two were lost in transit from Bonair, Iowa; have fed about 15 lbs. of granulated sugar. We did not dare to ship much honey with the bees, so they were short when they arrived.

We have taken nearly 700 lbs. of extracted honey; sold at 10 cts. per lb. except what has been used in the family. We sold \$18.00 worth of queens, and have now 18 strong colonies and 4 nuclei, all pure Italians. This, of course, is no great showing, nor is this a famous bee country. Bees gather a little pollen, and perhaps some honey, during every month in the year, but no surplus except in January, from scrub pine; in March, from orange-blossoms; and in May, from saw-palmetto. There is a great variety of flowers from January to November, and bees work on some of them, but not enough to much more than live. Palmetto honey is nearly equal to white clover. Orange honey is darker and not quite so good, but there is no honey that we have had that is so dark or strong-tasted as buckwheat honey. Bees swarm here on orange or palmetto honey. After the first of June, strong colonies reared a good deal of brood till October. Sometimes they would be nearly out of honey; but by October most of them had enough on hand to last them through. The small nuclei, however, had to be fed or strengthened from strong colonies, to keep them going. It is hard telling what they do live on. Corn-blossoms in their season help some, and field peas, which are raised here, keep them pretty busy. The bees would be very busy about the pea-vines, but not on the flowers. The glands,

or nodes, near where the flower stalks or peduncles grew, were haunted from morning till night. I looked in vain, however, for any full combs of honey. I found bees working on *Cassia chamaecrista* (partridge pea), which is very plentiful here; on *Palafioria integrifolia*, and on *Elephantopus tomentosus* (elephant's foot). For a long time the woods were yellow with many species of *Compositæ*, among the several species of goldenrod; only one, however, that I could find the bees doing any thing on—a coarse species of goldenrod (*Solidago pilosa*), which grew in low grounds. I saw my bees working on it very busily two miles from here, and think they would have done well on it if there had only been enough of it. There is not enough cabbage-palmetto near us for the bees to do much on. That yields a good deal of nice honey, but grows mostly on low ground, near rivers, hammock land, and near the sea coast. We came here on account of my health, and I think the only healthful places in Florida are on the high pine lands, several miles away from any river or hammock land, and away from any place where wells have to be dug through shell formations.

Eighteen miles east of us is Mr. Hart's apiary, near New Smyrna. There they have plenty of saw and cabbage palmetto; and the mangrove islands, when in bloom, rain down honey by the barrel full. I have been there several times. The mangroves are said to be limited to a few miles south of New Smyrna, and two years ago when I was there with friend Poppleton, from Iowa, we concluded that the bee business was about all monopolized. I believe Mr. Poppleton has since purchased land there; and if he settles there he will undoubtedly meet with success, as he is one of the most successful apiculturists that I have ever met. There is better soil at Smyrna, and plenty of oysters and fish, which are all much more desirable than the malaria, mosquitoes, and millions of sand-flies that can be kept out only by something as fine as cheese-cloth. Away from the mangroves, I know of no place in Florida where honey can be raised in such paying quantities as it can be in the North; yet any intelligent bee-keeper who comes here for his health, or to raise oranges, would, in my opinion, make a mistake if he did not keep a few colonies of Italians. In many places, pure mating would be a sure thing. Every queen raised in our apiary during the past season has proved to be a pure Italian. Two-banded bees are as scarce in our yard as three-banded bees are in the yards of some dealers. I once visited an apiary where there were only two or three pure colonies of Italians, in over 50 colonies; the rest were blacks and hybrids, drones flying from all, and yet the owner was advertising dollar Italian queens for sale (I believe he never advertised in GLEANINGS). There were two colonies of blacks near here, but I gave them two pure queens, and settled that business. The old settlers in this country know very little about bees. They call the queen a king, and think he rules the colony.

Twelve degrees above freezing is the coldest weather we have had yet. The weather averages, I think, between 60° and 70°, but gradually gets a little colder. We shall probably have frost in a few weeks. Last winter we had none till January. Sometimes, I believe, there has been no frost. Those who have ambition enough to plant and properly fertilize are now having good vegetables in their gardens. Cabbage, lettuce, radishes, beets,

turnips, egg-plant, tomatoes, and onions, will be all right till heavy frost kills the tender kinds. With a little protection they can be had all winter. Strawberries begin to ripen in January, generally, but seasons vary. Oranges and lemons are plentiful at \$1.00 to \$1.50 per hundred. The soil in all healthful locations is a very light sand, and will not produce much without fertilizing. People who have money enough to afford the trip, or who have bronchitis, catarrh, asthma, rheumatism, or dyspepsia, will be paid for spending some time in the pine woods of Florida. It is not a good place for a poor man.

GEO. W. WEBSTER.

Lake Helen, Volusia Co., Fla., Nov. 24, 1884.

KEEPING A SMOKER IN GOOD ORDER.

AN IMPLEMENT FOR CLEANING THE SOOT OUT OF THE AIR-TUBE.

AFTER using several kinds of smokers, I prefer the Clark to any other. I know some object to so much smoke, sometimes, when we don't need it; yet it does smoke when we do need it, and it just sends it off where we wish; and if we knock its nose against the hive or any thing, it doesn't fall apart and spill fire and the whole contents into the hive; and, again, it's so cheap that every one can have one, even to drive mosquitoes out of the house. Yet, like all others, there is a little trouble that I have for some time been studying on; that is, the wind-tube does, after a time, clog up with soot; and unless one gives it some attention and thought, he would say the smoker was good for nothing. Well, I tried a number of ways, and now I believe I've got what pleases me ever so much.



CHURCHILL'S IMPLEMENT FOR CLEANING SMOKER-TUBES.

Perhaps a wire of soft pliable iron may be better. I send you a sample, which is spring wire. You can clean out the tubes, also the nozzle of smoker. Please give it a trial; and if it is of any good in your mind, you can make as many as you wish (as it is not patented). You will see at once they cost almost nothing; but to me they have been worth a great deal, and what few have used them say as I do.

E. P. CHURCHILL.

North Auburn, Me., Nov. 5, 1884.

Friend C., you have indeed struck on something very valuable, in my opinion, even though it is quite simple. Our apiarist has tried it on the smokers he had in use, and he says that every Simplicity smoker should have one. We have ordered a lot of wire from the wire-mills, made just right, and will get out the necessary machinery for making them rapidly, and hereafter we expect to send one along with every smoker we send out. We credit you five dollars for the invention, and tender our thanks besides. Those who want one for smokers they already have in use can have them for 5 cts. each; 35 cts. for ten, or \$3.00 per hundred. If wanted by mail, 2 cts. each in addition, or 5 cts. for each package of ten.

HINTS TO THOSE WHO WANT TO BECOME PROFICIENT IN BUSINESS.

SOMETHING TO CLERKS, DEDUCED FROM 25 YEARS OF EXPERIENCE.

First Hint.

ORDER was heaven's first law, and it must be our first law here in the office: therefore each clerk is provided with a scribbling-book, and every mark with pen or pencil must be made in this book, unless it is made on the letter you are answering, as a note of what you have written to your correspondent. I have almost always had trouble in getting clerks to observe this rule; and then, I am sorry to say, new clerks are the worst, because they can not understand what harm it may do to make their computations on an old envelope or piece of paper picked out of the waste-basket, instead of making all their marking and scribbling in a book. One without experience can not tell how much trouble it makes in an office like ours, to have writing and figures on a piece of paper left on some of the desks. No one dare throw it away, for fear it may be important, and such scraps are sometimes kept around for weeks and months. For the same reason, I object to tablets. A book costs little more, and then any offer that has ever been made to anybody, or any figures that have been put down, can always be found, even if somebody should claim we had wronged him by an error, and should not make complaint until weeks or months afterward. Your computation or scribbling book should be dated, in order that you may be able to fix the date of any transaction, as we have mentioned, when called upon to do so. The pages should be filled close and solid, as far as you go—not only on account of economy, but that you may learn correct business habits. If you open the book at random, and scribble in it here and there, it is unsightly and untidy, and can not well be kept accurately dated. If I pay you for your time, it is my privilege to direct matters, and say how they shall be kept; and whatever marks or figures or writing is done on time that you charge me for, is my property. If I choose to have it preserved, it is my right.

Second Hint.—Provide yourself with paper-weights of some kind, and see that no loose papers are ever lying on the top of your desk. A gust of wind may sweep them off on the floor, and they be mixed up or lost. Have your paper-weights labeled, and keep them on top of the proper pile of papers or letters. Allow no loose papers a place on your desk, or in the drawers to your desk. In fact, keep no papers or property of any kind that you are not using or likely to use. Fight against accumulations of rubbish and dead property as if it were an insidious foe. Make every thing about you count somewhere, and keep it moving.

Third Hint.—If you spoil an envelope or postal card or sheet of paper, by no means waste time in tearing it up. It will be just as safe if you lay it quietly by in our waste-paper basket. I have seen a new clerk occupy considerable time in tearing a sheet of paper to pieces, and then throw it toward

the waste-paper basket, leaving the pieces to blow about the room; whereas, if it had been quietly deposited whole, it would not only have saved her time, but the clerk who cares for the room, in picking up the little bits. Our waste-paper basket will hold whole papers, but little pieces rattle through it.

Fourth Hint.—When you make a mistake in writing any word or figure, under no circumstances undertake to scratch it out with a knife or any similar implement. Cross it out with a pen, then put down the word you want. If you get a whole line wrong, cross out the line neatly. It is not necessary to make a great number of crosses, for such motions take time, and mar the beauty of your work. Draw two parallel lines across the error or line, and this will indicate to any reader that such portions are not to be read or considered. A single line across a word does very well; but it may be mistaken for the cross of a *t*, and therefore I would draw two parallel lines with the pencil, rather than cross each letter or figure. If you do not discover that the letters or figures are wrong until the letter has been written, after crossing out the word in the way I have indicated, put the proper word or figure just above the one crossed out. Under no circumstances make one figure on top of another. Expensive blunders and considerable quarrels have resulted because clerks persist in this very bad habit. Clerks sometimes urge that there was not any room to write the word properly, unless they scratched out the wrong one with a penknife. When you meet a case of this kind, please bring it to me, and I will show you how to fix it. Every clerk should be able to write a small plain hand, with the express view of being able to interline things of this kind when necessary. One great reason why we employ women to do writing, rather than men, is because they are usually taught to write a small plain hand.

Fifth Hint.—If you are not able to make figures so plain that no one can ever mistake one figure for another, set about doing it at once, and practice on them, and decide on ways of making them until you can do it so well that no one will say, during ten years of work, that he ever read a 6 for a 0, a 7 for a 1, a 2 for a 3, etc. You can practice making these figures in your computation-book, and I will pay you for the time of doing it.

Sixth Hint.—When you are intrusted with letters to answer, be sure that every question your correspondent asks is answered in some way or other. If he asks a question that is answered plainly in the A B C book, write him a postal card, telling him the A B C book mailed him covers the ground fully; and if you can, without great trouble, tell him what page in the book treats on the subject. If your correspondent asks for a price list, be very sure that he has one; and after you have sent it, tell him so. Never say a price list has been sent, because you are just going to send it. Accustom yourself to telling the exact truth in every thing you do. Many business men and women have crippled their money value by getting into this one habit of writing to people that things

are done, when they only mean they are just going to do them. Never, under any circumstances, say a thing is done until it is done. About three-fourths of the people who apply for situations will now and then forget to send a correspondent (and probable customer) a price list when he asks for it. I once sent to a large business firm for a price list of their machinery. They wrote me a courteous letter, saying the list had been sent. I waited several weeks, and did not get it. They wrote another courteous letter, with an humble apology for the clerk who should have attended to it, *and didn't send it then!* The third time I made out to get the price list, and sent them an order for several hundred dollars' worth of machinery. Many clerks seem to think it is a small thing to make a fuss about, because now and then they omit such a little item as mailing a price list; but after tracing the matter up, and finding the same clerk had done this two or three times, I usually say, with my past experience, that he had better be set to work somewhere where such mistakes would not do very much harm.

Seventh Hint.—When you write to a correspondent that something will be sent him, make it your business to inquire and understand how this promise is to be made good. Last summer we were, for a few days, out of A B C books; and as the friends were in a hurry for their goods, the shippers were instructed to send the goods along, and that the A B C book would follow at our own expense. Well, one of the clerks wrote this to a large number of customers; and as she was new in the business she supposed some arrangement had been made for mailing the books when out of the press, but did not inquire into it. The letters were distributed, and complaints kept coming for several months afterward, "Is it possible you have not got those A B C books done yet?" and such like statements. A search revealed the fact that the promise was noted on the back of the letter, but it was then distributed, and that was the end of it. Therefore, when you make a promise, make it your business to find out how this promise is to be kept, and do not rest satisfied until you know; for your own reputation, as well as your customer's welfare, is involved. These letters, after having been answered, should have been carried to the mailing clerk, to be placed under her weight, labeled, "Awaiting A B C books." The books have been piled up in the vaults several months, while these friends were watching the mails anxiously and patiently.

Eighth Hint.—Not only keep the top of your desk free from rubbish and accumulations, but be sure you know the contents of every drawer in your desk, and do not harbor any rubbish there. Be prepared, if possible, to answer every letter within a few hours after it has been put into your hands; and when you are done with it, push it forward quickly to the next clerk, as soon as possible. Some clerks will keep letters lying on their desks when it seems as if no one could read them without feeling touched at the writer's pleading to have his goods hurried along. I have found letters that had

been lying several days when the writer said, "Mr. Root, do not let a train leave after this gets into your hands, without putting my goods aboard;" and yet the clerk who had the letter in charge read it over listlessly, and laid it down again until two or three trains had passed. With the view of remedying this trouble, most of the desks are supplied with a weight, reading like this: "Immediate attention," and my instructions have been that *some sort* of an answer must be given to all such letters before another mail leaves the office. You may think this an easy thing to be managed; but, my friends, it is one of the hardest things to attain of any thing I have ever tried in my life. Even during the dull season, when clerks have only enough to do to keep them part of the day, they will let mails leave once and even twice before the paper under the immediate-attention weight has been looked at. One new at the business would say, "Turn them off and get better ones." I tell you, I have tried different people until I am sick and tired of it. The inertia of humanity, if I may so term it, seems to be the obstacle in the way, and it pains me to be obliged to say that men do not average nearly as well as women. In spite of every thing I can do they will answer letters and leave them lying just where they last had them. A man can not be made (so far as my experience goes) to be as neat and orderly and systematic in this question of work of correspondence, as a woman; and it is only once in a great while that we find a *woman* who is fully up to all I have mapped out heretofore. There are a *few*, however, and we sometimes find them where we least expected it. One whom the world has never noticed much, perhaps, and whom nobody would suspect of having rare business traits, suddenly develops, when put to the test, a faculty of managing all these difficult little matters I have mentioned. While her comrades plod on at perhaps 7½ cents an hour, she walks up rapidly into 8½, 10, 11, 12, 13, 14, 15, 17½, and then 20 cts., perhaps, in a short space of time comparatively. There is something encouraging about this, my young friends; when a girl or boy begins to *catch* the spirit of promptness and accuracy, he usually improves fast. It may take him a good while to go from 9 cts. per hour to 10; but he will go from 11 to 12 and 12½ in a much quicker time; 14 and 15 come frequently in a few months. Pretty soon he goes up to 20, and then he becomes able to take charge of a room full of hands, and works at a salary, without being obliged to report time every day.

I suspect, my friends, it is not only clerks in the office who need what I have written above, but very likely it is boys and girls, and men and women in every department in life. "He that is faithful in few things shall be made ruler over many things;" and I have, contrary to my first intention, put this here in the journal for the benefit of all of you, as well as for the clerks in the office. Occasionally we have clerks who think I am foolish and notional, and that they have more wisdom than I. May be they are right about it; but I have learned by past experience, that I succeed when my helpers fall into my

ways of doing things; and when they do not, I do not get along. So if they prefer their own ways and plans with small pay, I suppose it is their privilege to do so.

Ninth Hint.—Be very careful when you make any arrangement with a customer touching his ledger account, that your letter goes to the book-keeper, that she may make a minute on his ledger account of what you agree to do. For instance, a man receives some section boxes, and through our fault they do not reach him until his honey season is over. He asks us if he shall return them or hold them subject to our order. I indicate with my pencil the latter course. The clerk accordingly writes him, "Hold the goods subject to our order," and sends it off, distributing the letter. In due time the book-keeper sends a dun for the account unpaid, and our friend gets very much displeased, decides that we know perfectly well what we told him, and are trying to "bulldoze" him. I have been obliged to give up in despair a good many times, in trying to get a clerk that would remember things like this. The man's ledger page is something *sacred*, if I may be permitted to use the word. You have no business doing any thing with it, without promptly giving him notice. You might lessen the amount of his indebtedness by giving rebate, and he would not be offended; but you have no business charging any thing to him, or making any sort of an entry on his account, without his permission and direction; and this brings us to the—

Tenth Hint.—If you take the liberty of sending something to a customer he did not order, or something costing more than the article he ordered, a full explanation must be made at the time you do so, and you must always add, "Subject to your approval;" or, "If we have not done right in deviating from your instructions, write us immediately, and we will make it right." In such cases I think it a good plan to inclose a postal card addressed to yourself, asking him to say at once on the inclosed card if the arrangement is satisfactory. Every little while wrangles and disagreements between supply-dealers and their customers are submitted to me, and a great part of the troubles come because the supply-dealer took liberties, if I may so express it, with the money that was intrusted to his care. I have had so much trouble in finding clerks that would attend to this matter that I have sometimes said inwardly, if not aloud, "Oh for a boy or girl that would recognize the rights of those who send their money to us!" A great many assent to it, and seem to understand it; but when the rush of business comes, and unless my eye is constantly on every little detail, they charge a customer more for a thing than he expected to pay, because the goods have advanced, or because he had an old price list to order from, and not one word of explanation is given; or they will send him something a little different from what he ordered, without, a word; whereas, had they just penciled, "The best we can do; if it does not suit, write," all would have been pleasant; for I have found, by years of experience, that the person thus appealed to will, nine times out of ten, put up with a lit-

tle inconvenience; whereas, had the matter been left without any explanation, he would have naturally concluded that we did not care whether we obeyed orders or not, so we got his money; and about all the ugliness there is in him would have been stirred up so as to come to the surface.

Eleventh Hint.—I do not know how it is with other employers; but I want clerks who will not be partial to me. I know it is very desirable to have clerks who will look out for their *employer's* interests; but, my friends, I would a thousand times rather have a clerk who would look out for God's interests. What I mean by that is, I want boys and girls, and men and women, who will strive to do right before God, instead of before me; who will try to keep the spirit of justice constantly before them, who, instead of trying to make all business count in my pocket, will rather hold up the idea, and keep it before them, "What is just and right and fair, and honestly due these friends of ours who are intrusting us with their money day after day, even though they be hundreds and thousands of miles away?" I am glad to see my employes interested in my welfare, but I do not want any clerk partial to my interests, and I do not want one whose judgment is warped because he feels friendly to me. A great many of the bitter, hard, unkind letters that have been written have been because some clerk lacked in judgment in this matter, or because his judgment was woefully warped. Sometimes I have said to myself, "We can not have this clear-sightedness and impartial judgment without age," and I have tried older people; but I found just about the same difficulty. Do you want to know about what I have concluded, my friends? I have concluded that there is nothing in this world but true Christianity, and a love for the Savior, that can put self and selfish interests out of the human heart. Now, if I pay Christians more than I do those who are not professors, please be just enough to me to recognize that I do it because they exhibit this trait, and not because of their *profession*.

Twelfth Hint.—Never quarrel with a customer. Never allow yourself to even think, much less say, "This man does not know what he *does* want." A man or a clerk who quarrels with a customer, quarrels with his bread and butter. Treat all customers, whether you meet them personally or whether you get a letter from them, as if you thanked them, and thank God for sending them. Treat them as something sacred, not as though it were their *money* you were after, and that was all you wanted of them. We are often accused of the above, and I am afraid, dear friends, we sometimes deserve it; but after studying the matter carefully I have decided it is not so much selfishness as it is a sort of shiftlessness and laziness. The trouble is, it is this old *half-heartedness* I have written about before. And now, my friend, I do not know whether you are a Christian or not; but if you are making a profession of religion, and that religion does not stir you up to energy and zeal in working earnestly, faithfully, and hard for your neighbors, when the neighbors bring busi-

ness to you, then your Christianity is not worth much. I have before spoken of the talk we have about *doing good*; but I tell you, it is a thousand times better to do your *duty* as it lies before you on your table or on your desk or in your store or on your farm. Do your duty; do it well, thoroughly, faithfully, and unselfishly, and you will probably do much more good than in starting out as a missionary, when it is not your duty to be a missionary.

Thirteenth Hint.—When an order comes to you that for some reason can not be filled at once, be sure you promptly notify the one giving the order, and let him know what to expect, as soon as possible. New hands have troubled more than I can tell you by being remiss in this one respect. For instance, a boy is sent half a mile to the hardware store for some bolts of a certain size. When the time comes to use them, several men are brought to a standstill for want of the bolts. After considerable trouble the boy is found.

"John, where are those bolts you were sent for?"

"Why, they hadn't got any of that size."

"Then why did you not come to me at once, and say so?"

"Why, as they hadn't got any, I didn't suppose there was any use of saying any thing more about it."

"What is the nearest they had to the size you did want?"

"Why, I didn't ask them, and they didn't tell me."

Now, the boy was greatly at fault, and I should say the hardware man was at fault in not sending word what he had, larger or smaller, that might answer. It is not only boys, but men and women, that seem to be almost invariably guilty of this same way of doing business, until thus taught different after coming here. Obey orders to the best of your ability, and then notify the one giving the order the result at once; and *especially* should he be notified if you can not furnish what he asks for.

Fourteenth Hint.—Don't let any transaction slip out of your hands until it is completed. For instance, a new clerk once said that a man wanted to know the weight of our two-horse-power engines. I told her to write and ask the manufacturer. In a few days the answer came, and I gave it to the clerk. Pretty soon she asked me what she should do with it. "Why," said I, "write and tell him the weight of the engine, of course."

"But, I do not remember who it was."

"Did you not keep his letter or his address?"

"No."

"What did you tell him?"

"I did not tell him any thing."

"Why, is it possible that you neither wrote him nor saved his letter nor kept his address, after making such an inquiry as you did?"

"I did just as you told me to do."

You may smile, friends; but I have known older people of both sexes to be guilty of this same thing over and over, until they had been taught that they must keep the

address of such inquirers, in the computation-book, until the answer came. May be we lost the sale of a steam-engine by this little piece of thoughtlessness.

Fifteenth Hint.—Now, friends, in all the foregoing I have said nothing about lazy clerks. It is a fact, that there are some people who seem to expect they are going to get on in the world by lolling about in a lazy sort of way, gazing abstractedly out of the window, or marking idly with their pen, yawning and wishing it were dinner-time, etc. If you are working for a business man who expects to make a success of it, he will probably get you out of the way the first opportunity, if you are one of that sort of people. In fact, he can not very well do otherwise; and I am sorry to say, that when a person has got into a habit of loafing a great part of his time, so far as my experience goes he rarely gets out of it. One who will accept wages when he is conscious that he has idled a great part of the day is a good way down, on the road to the poorhouse. Sometimes when business is dull, and there is not very much to do, we find clerks who will try to spin out their work, as it were, to make a piece of work that they could do in a couple of hours, if they set about it with energy and zeal, last half a day or more. It is positively awful, to see to what perfection some people have brought this knack of being able to put on the appearance of being busy a long while on some little job. I have sometimes thought that one might almost as well take money out of the money-drawer of his employer, as to manage in this way. "Do with thy might whatsoever thy hand findeth to do;" and if you get all the work done up, tell your employer so. Then if he has nothing further for you to do, I think it would be money in your pocket to tell him you are going home, or take a holiday until he has some work to do. If you are a valuable hand, and he does not like to have you away, he will pretty soon find something for you to do. If you are not a valuable hand, set to work to make yourself so. This, of course, refers mostly to hands who work by the hour. A very common way of curing laziness is to set those who are addicted to it at work by the piece. But where one has become addicted to this habit of shirking duties, it is pretty hard curing him by setting him at work on piece-work. One who will cheat in regard to the amount of work he does will cheat in quality or cheat in count. Some honest clerk will have to waste his time in watching him; and my experience is, that the dishonest one eventually beats in the end. There is no other way to do, in the great majority of cases, than to dismiss him to annoy somebody else; and by and by he settles down and down, and eventually the county infirmary takes charge of him. This is a sad kind of picture, I know; but I hope you will take warning from it before you are old, and before your habits are fixed.

If you want to make progress in bettering your wages, when you work, work; and when you don't work, don't work. Either go ahead or stop altogether. Many times one doesn't feel like work. Now, if you are anxious to get up in the way I have been

telling you, at such times I would stop altogether, or else explain to your employer that you don't feel able to do your accustomed work, but that, if he wishes, you will stay and look after things as well as you can, at reduced wages. Very likely he will tell you, if you are much needed, to go on and do as well as you can, and it will be all right about the wages. This I know, he will thank you in his heart, if he does not say so. I recommend these explanations, because without them appearances might count against you; and in all this, dear friends, we want to accept the Bible maxim, and shun every appearance of evil.

Sixteenth Hint.—Be careful how you make free with the property of the establishment, without permission. Sometimes we get a new hand who straightway helps himself to matches, soap, towels, etc., without asking anybody. After awhile he goes into the store and takes tin cups and tin pails and the like, and always leaves them where he last used them—out in the lots, perhaps.

When the weather gets severely cold I often find thermometers hung up on the outside of the different parts of the building. These are put out, doubtless, to register the temperature. There they hang until I see them and put them back in their places, or until they are spoiled by rust and exposure. All these things might have been well enough had permission been granted to use them in this way; but where many hands are employed, the one who makes himself free in this way, or is guilty of such liberties, is out of a job speedily. Make it a point to get permission before borrowing or using another person's property.

Now, friends, in these remarks I may have erred in judgment, and may be there are other sides to many of the questions. But most of you have wanted to know how you can improve your daily wages. With the experience of years before me, I have tried to tell you as well as I can how you may help yourself, and help those you are working for, at one and the same time.

BEE CULTURE IN CUBA.

"IT IS NOT ALL GOLD THAT GLITTERS."

FRIEND ROOT: The above is true of Cuba; though a kind Providence has smiled upon this country in more ways than one, yet it has its dark side, a side that is bleak and gloomy, amid the glare of a noonday tropical sun. How can this be? You shall know.

A little more than one year ago we landed here with 100 colonies of bees; owing to circumstances that we could not control, Christmas found us with only 24 of the 100 colonies left. The 9th of January our first island-bred queen began to lay; from that time until the 11th of April, honey came in rapidly; and as increase was the end desired, all energies and means available were devoted to accomplish our purpose, and June 30 found us with 520 colonies. But, alas! "vaulting ambition had o'erleaped itself," and our increase was stopped only upon the eve of a four-months' dearth of honey (I see the smile that covers your face now), and I repeat the old adage: "Those laugh heartiest who laugh last." We had our laugh when prosperity smiled and kept smiling

upon us; but the day came, when, beneath a tropical noonday sun, the sharp shrill sound of the robber was all we heard. "Devastation and destruction" stalked abroad under this noonday sun, laying waste the hopes that we had stood upon for the last six months.

After the robber, came the moth; and with 520 colonies, all weak, and no honey coming in from the fields, to carry them through to the first of November was no small task. You ask, why did we make such an unheard-of increase? First, increase was what we wanted, and, urged on by the reports of native bee-keepers, that in August there was a good honey-flow, and in September the fall flowers began to bloom, we thought we could not well go wrong, and that there was really no limit to what bees would do in Cuba.

But, this has been our first year, and experience has taught us a lesson that has come to stay. The honey-flow in August did not come; September flowers failed to yield honey; October passed, and still the robber sought that which was not his own. But with the advent of November, the royal palm came to the relief of the hungry millions, and peace and plenty took the place of discontent, dishonesty, and death. We are on the road to prosperity now, but with many hives that are empty; every day brings us good cheer, and more of it. But, friend Root, this experience we had to have; no one could tell us about it, for they did not know this is the only apiary run upon the improved plan. What bees are kept are kept in log gums, and what do the keepers know about the honey-flow? They say they *think* that such and such is the case, but they have not the means of knowing the condition of their bees, or the amount of honey coming in, only when in the winter the bees get their rudely built hives full, and build comb upon the outside, then they know that honey is coming in fast, and there their knowledge of bee-keeping ends.

There are more things to learn about modern bee-keeping in Cuba, than to be able to tell exactly when the flow and when the dearth of honey comes. Here, as you know, the best surplus season comes in the winter, and it is winter with the bees. Although it is warm, plenty of flowers and honey, the nature of the bee is *not* materially changed; the queens lay about one-half what they do in the spring months, either here or in the North; they make no preparations for swarming, they seal up every air-hole on the top of the frames, just as in the North, and all their calculations seem to point in the direction of a season of rest and a winter's nap; but the winter, with all the severity of the North, does not come (yet it is cold here, quite chilly, but it does not freeze); the sun shines warm in the middle of the day, the flowers bloom, and, instead of "hibernating," the bees gather honey. But I think it is unnatural, and here comes in *one* of the great difficulties in Cuban bee-keeping; that is, in getting your colonies in proper condition to store honey at this unnatural time of the year. They are cross, they are *mad*; they don't want to be bothered; they want to be let alone; they want to sleep; they want to hibernate. They are apt to supersede their queens if you bother them, and every thing goes to show the close observer, that gathering honey and breeding in the winter is not as nature has designed it for the honey-bee. Bee-keeping in Cuba has many *ifs* and *ands* to it, yet I do not say that it will not eventually be a success; but, one thing is sure;

we have much to learn about winter management, and controverting the nature of the bee to our wants. Last spring we would not have given a big orange to have any one insure success; but, "where ignorance is bliss, it were folly to be wise."

November 20, 1884.

A. W. OSBURN.

JUST ALIVE, BUT DIED.

SENDING QUEENS ALIVE TO NEW ZEALAND.

ON page 797 of GLEANINGS for 1884, I told you that, "Early this fall I started a queen for New Zealand in the mails," but that it had not been heard from since it arrived at San Francisco, Cal. On the 11th of this month I received the following letter:

Mr. G. M. Doolittle:—The following will give you an idea of how the queen and bees arrived, which you mailed me Aug. 20th. Queen and bees came to hand on the 23d of Sept., at 3 o'clock p. m. All the workers were dead, and the queen gave the last kick when being taken out of the cage. I tried hard to revive her, but to no purpose. The cage contained stores enough to last another week. All the bees looked clean and bright, including the queen. I think the cold was the trouble. If you are agreeable, I will try next season one or two shipments, but one or two months later. Thanks for trouble you have taken. My bees are in good trim, and the clover is beginning to open plentifully. Hoping you have had a good season, I remain yours truly,
Normanby, N. Z., Nov. 8, 1884. G. W. EPPING.

By the above it will be seen that I only succeeded in getting a queen barely alive from Borodino, N. Y., to New Zealand, but my friend seems to think that it was the cold there which caused them to die. Quite probable he is correct regarding the queen, but I think that the worker-bees could not have lived to reach there alive, even had the weather been ever so favorable, for this reason: Bees younger than 5 or 6 days old are wholly unsuitable for sending in the mail; for bees younger than this do not fly from the hive under ordinary circumstances to empty the intestines of the pollen excrement they contain from the food they consumed while in the larval state; hence if such bees are shipped they will generally have the bee-diarrhœa, and fault themselves and the cage, causing the whole to die within a short time. Thus six days of the bees' life is passed away before it starts on the journey. As the average life of the worker bee in the working season is not over 40 days (none living, under the most favorable conditions, to exceed 45 days, as I have several times proven), it will be seen there can be little prospect of a worker, caged at 6 days old, living more than 34 days more. These bees were sent to friend Epping were caged at 11 o'clock A. M., on the 19th day of Aug.; and as he says they arrived there at 3 p. m. Sept. 23, it will be seen they were caged 35 days and 4 hours, or one day and 4 hours longer than we could expect them to live had they had their liberty, while life, of necessity, must wear out faster during the uneasiness of confinement. As these bees were sent by registered mail, I had a chance to know how long they were going across the United States to San Francisco, Cal., which proved to be in this case nine days. Now, if I lived in California I believe I could mail worker-bees successfully to New Zealand, as that 9 days would reduce the 35 days down to 26, which time could be endured by bees, even in confinement.

Perhaps some would like to know how I prepared these bees for shipment, so that they can try shipping long distances. I am a firm believer that the

day is coming when all queens will be sent by mail where the journey does not require more than 26 to 28 days to accomplish it; and the more trials there are the sooner will the result be accomplished. The cage and candy were made the same as was described by me on page 509, GLEANINGS for 1883, where I wrote relative to the queen I sent to Scotland. In addition to this I took a piece of clean old tough comb and fitted it securely in the middle of the two large holes, so fastening it that the bees could go over the top of it and have free access to both sides, where the cells were. In fact, the bees had a hive with one comb in the center, and plenty of food in the ends. My object in putting the piece of comb in was, so they could carry this honey from the "Good" candy and store it in the comb if they wished to, thus keeping them more contented, and make it seem more like home to them. I did not know that they would do this for certain until the next morning, when I was convinced they did by finding five times the pulverized sugar under the cage I had seen before under any cage left over night, and also by seeing liquid glistening in one or two of the cells which I could just peer into through the wire cloth. I am sorry friend E. did not tell me whether or not there was any liquid honey in the comb when it arrived. Those last kicks of the queen in New Zealand give me faith, and I shall make further trial next Sept. and Oct., in sending one the 25th of Sept. and one Oct. 15, should Providence spare my life, and friend E. still advises me to do so.

On page 820, Dec. No., I find these words: "It just now occurs to me that friend Doolittle's remarks about the sugar in the Good candy being of no value, will need a little qualifying when we talk about wintering bees on candy from sugar and nothing else." Now, friend Root, it almost seems as if you did not really want to understand, sometimes. Won't you please read my article on page 797 again, and see if it is not already qualified regarding wintering? In fact, the sugar is sometimes used by the bees in very cloudy, misty weather in the summer, in the cages, but never in dry summer weather; and when given to full colonies, the sugar is used in the summer only after it is moistened by the dew at the entrance, as friend Fradenburg tells us on page 27, 1884; at least, this is my experience.

G. M. DOOLITTLE.

Borodino, N. Y., Dec. 15, 1884.

I confess, friend D., that I had not gone over your article on page 797 when I wrote what I did, and I did not remember that you used the expression "warm weather." If you mean by not wanting to understand, that I am not willing to admit that bees can not eat dry candy in warm weather, I think I shall have to plead guilty. When I first recommended giving bees frames of candy instead of liquid food, our experiments were all made during severe droughts in August and September, and I built up nuclei, and fed them for weeks on nothing but hard candy poured into wired frames. On one occasion our apiarist left a wheelbarrow full of hives containing such frames of candy. It was in the middle of the day, and a very dry, hot day too; but in the course of an hour or two we had about as lively a time with robbing as you often see. In the back numbers of GLEANINGS I gave some experiments with dry coffee sugar. When sugar

was dried in the sun so as to be quite dry, it took the bees so long to manage it they worked on it almost as they worked on natural stores; but a little sprinkle of water would start robbing at once. Bake some sugar in the oven, if you choose, until it is as dry as you can make it. Then put it in the sun in the middle of the day, in a time of drought, when bees are crazy for any thing sweet, and they will take it up and use it at a pretty fair rate. In our back volumes this process is described for making bee candy direct from sugar, without any boiling, and I used it largely in *hot dry weather*. Very likely they bring water to moisten it, for this, of course, I can not dispute. If a jar of water, with a cloth over the mouth, be inverted over the candy they will take it much more rapidly. — It seems to me we have had several experiments, showing that bees during confinement, as in winter, may live ninety days or more. The little cages of bees we get from Italy, I think have sometimes been as much as six weeks on the way. May be they will not live more than 35 days when confined in the mails; but I should hardly be inclined to set the limit there, because worker-bees do not ordinarily live longer. I am glad to hear of even so much success, for it is a good deal better than we have accomplished ourselves in mailing queens.

ALLEY'S DRONE-TRAP.

A REPORT NOT VERY FAVORABLE.

IN the bill for goods last April I requested 24 queen and drone traps, as advertised. I supposed that you had plenty on hand. In your bill you have charged me with 12; but by some mistake there was but one trap sent. As matters have turned out with me, the disappointment amounts to but little. I saved about 20 swarms of blacks and Italians, and have not a single hybrid in either stock. I set the trap before a stand of bees; they could pass in and out very well when so minded; but about a third of them, after making a trial, became united, and went to other stands, and in less than a minute, got up a flight. After making three or four such trials I laid aside the trap.

SELLING, HANDLING, AND SHIPPING HONEY.

Bees in this section gathered honey the fore part of the season briskly; but after the first of August they made no surplus. Mine took the swarming fever just at the beginning of basswood bloom, which was over by the first of August, so I do not consider myself as an apiarist in running bees for money. I think it unnecessary to make a report of loss and gain. I will say, that I made about 2000 lbs. of section honey, about a third of which is not fit for market, owing to not being filled out and sealed over. Bug juice has not yet made its appearance in this country. There were some 30,000 visitors at the White Sulphur Springs, near Waynesville, last summer, many of whom came to see the bees and honey. The most of the honey that I sold was to them for samples to take home. Some bought a single box, some half a dozen, some a dozen, and some a whole case of 48 boxes. The ladies were so highly pleased with the honey and apiary they give it the name of Honey Dale. I have 15 cases ready packed for shipping, but the way they handle things on railroads, I am deterred from offering to ship.

unless I could go with the goods and handle them myself. Fortunately I am not needing the money, and may be able to sell at home next summer.

With the exception of section boxes, I have bee-furniture on hand, ready to meet the seasonable demands of another summer. My Italians have not had a chance to show their honey-gathering qualities, from the fact that I have kept down by making artificial swarms, and the latter part of the season we had ten weeks without a single shower of rain; though the landscape was blooming with golden-rod and asters, they furnished but little honey.

I have in all, 94 or 95 stands, nicely packed for winter, on their summer stands. W. FRANCES.
Waynesville, N. C., Dec., 1884.

Friend F., we sent you one drone-trap, and it was a clerical error in charging you for more than one. I have had some fears that the drone-traps might induce bees to go into the wrong hives—especially Italian bees, for in the busy season they often seem to think it does not matter much what hive they go into to unload their stores. Setting the hives further apart might partially remedy this. Have others had any like experience?

SOMETHING FROM OUR OLD FRIEND GALLUP.

CALIFORNIA THE PLACE FOR WIDE-AWAKE, ENTERPRISING BEE-KEEPERS.

I WISH to describe the success of one of our beekeepers here as nearly as I can, for the benefit of your readers. He commenced a few years ago a poor man. He took up a government claim of 160 acres. He now has a small stock of cattle, and during the winter season he sells on an average 50 dollars' worth of eggs and butter per month; raises quite a quantity of fruit, a nice vegetable garden which produces vegetables the entire year. His cattle obtain their living, and keep fat and thriving on the natural feed, without any care, the entire year. There has never been a season that he has not made some surplus honey since he commenced, and this season he has made 80,000 lbs., or 40 tons, as we reckon here. He has money at interest, and is now well fixed financially, so that he can hold his honey until the price suits. He has 10 tons of last year's honey on hand—in all 100,000 lbs. He hired one hand this season for 3 months at \$25.00 per month. He keeps his own team, and does his own teaming. With the exception of the hired man he has done every thing himself, with some help from his excellent wife and children. He has, or had in the spring, 270 stands of bees.

The price of honey here now is 4½ to 5 cts. wholesale. Now, this man has demonstrated that bee-keeping is a success when properly managed, even in a poor season; as, since he got his stock of bees up to 100, he has made honey every season. I think the lowest was 6 tons, and from that to 8 tons; but when he had the small yields he had a good price. His cash out is 80 cts. per case of 120 lbs.

There is no loss of bees in wintering, and no care whatever from September to February. He always keeps his bees in good condition, and leaves their hives full of honey at the end of the extracting season.

I might tell you of another man who commenced about the same time within six miles, and is now some \$600 in debt, and this season made 8 tons of honey, sold it for 4½ cts., keeps three dogs, no stock of any kind, because it won't pay to bother with

them, and still he has an excellent range. Cows are worth only from 80 to 100 dollars each here; beef, 12½ cts. live weight; eggs, 36 cts. per dozen; hogs, 5 cts. live weight, and in half a day he could fence across the canyon and then turn in calves at from 7 to 10 dollars per head, and let them grow to cows or beef without any further trouble. Such is life in California. This last man cries hard times; has been in the country ten years, and has never yet set out a tree of any description, nor a grapevine; buys all of his vegetables, etc., and still he is quite an energetic man; for if he can, by climbing over the mountains, and carrying a heavy rifle, succeed in killing a fat deer once in a while, it is a great success. E. GALLUP.

Santa Ana, Cal., Dec. 8, 1884.

Friend G., we have been very much interested indeed in getting a word from you once more. I was a little disappointed when I got to the end of your story, to find out that the man who had done so well was not named E. Gallup; and then I thought may be that last man was going to turn out to be you; but I soon saw I was mistaken there. Now let us know what you are doing, old friend. Why don't you have a big bee-ranch, and give us something in every number, as you used to do in the old *A. B. J.*? Why, friend Doolittle quotes you now every little while, and yet you are letting all the skill and wisdom you possess in regard to bees, waste its sweetness on the away-off California desert air, are you not? Is the doctoring business so good out there that you can not have just a few bees, old friend?

TRANSFERRING.

SOME HINTS FROM FRIEND MASON.

THE tools required to do this remarkable job are a hand-saw to saw off the cross-sticks, a hammer, a cold-chisel, and a common case-knife. We also want a ball of linen twine and some woolen cloth. We now take our new hive, supplied with three frames of empty combs or foundation. Sometimes, when convenient, we use one frame of brood drawn from some other hive, but this is not essential.

We now go to the stand of the colony we wish to operate upon, smoke the bees, saw off the cross-sticks, and with the hammer and chisel cut the nails so as to get off one side of the hive. We now place some woolen cloth in a box, and cut out the combs with the case-knife, brushing the bees all directly into the new hive, which should sit now on the stand of the old one. As the combs are cut out and the bees are brushed off, a piece of the cloth should be laid between each comb; the old hive should be carried away, and the box of brood-combs carried to the house, put in a warm room, if cold, or into the shop, and then transferred in to the frames. For fastening in combs I find linen twine far the best. Cut off four strings, two long enough to go around the frame endwise, and two widthwise; lay down these strings, and on top of them the frame. Fit in the comb, and tie it in with these strings, then bring the frame to an upright position; and if any more string is wanted to secure it, use it. When the combs are all fastened in, carry them to the colony, and shake the bees from the frames left for them to cluster on, and give them their combs. In

this way you need keep the combs exposed but a very few moments, and then you can transfer in your room without bother from the bees. I have found this the best plan, among all I have tried.

Mechanic Falls, Me., Dec. 4, 1884. J. B. MASON.

THE SCIENTIFIC BEE KEEPER.

THE MAN WHO KNEW ALL ABOUT BEES.

"YES," said he, "bee-keeping is now reduced to a science; and all that we have to do is to make this science a study, just as we study surveying or civil engineering, and we are bound to succeed. I know all about bees; I used to keep them years ago, and I've read Quinby's bee-book, and to me bee-keeping is a science—no more, no less; I say, give a man bees, and give him also the science of bee-keeping, and he will make money. Now, in my experience—" But I waited to hear no more; I was cooking dinner, and he was one of the folks who will neither come in nor go away, but will keep one standing on tenter-hooks in the door all day, and he was so deaf that all my words were lost on him. He had bought a colony of bees of me a few days before, and he had come now to see about them.

That evening about dark he came for them. The day had been hot, and the portico was full of bees. I told him to wait till morning. "No," said he, "I'll take them now; I'm not afraid of bees; I'll let every bee in that hive sting me, if any one will pay me for the bees; all that a man needs is to understand the science of—" He had his sheet spread down by this time, and he took hold of the hive, one hand at the back, the other at the top of the portico in front, when a handful of bees seemed to sting him all at once. He dropped the hive, executed a war-dance, and yelled "Jerusha! Jerusha!"

He wore linen pants, and the bees climbed up on the inside, and stung him right and left; and at every spear-thrust he jumped clear off the ground, and yelled "Jerusha!"

I suppose "Jerusha" is his patron saint, from the way he called on her in his affliction. When the bees got to putting in their best licks he did not have time for the whole word, so he said "Je—" (with a slap and jump) for one sting, "—ru—" (slap-jump) for another, and "—sha" (jump-slap) for the third; then he seemed to lose all account of syllables, and he danced a Highland fling, and uttered a perfect chorus of "Jerushas." Our whole family were gathered around, and they held their sides, and laughed, while the boys rolled on the grass, and screamed, and called for some one to fan them and rock them.

Well, they tied the bees up in the sheet, swung them on a pole, and carried them home; and next day they sent for me about ten o'clock, to come there and cover up those bees. I found the hive open, the cover lying some ten feet away, and no scientific bee-keeper in sight; all the family had business in the lower pasture, or the cow-lot; and when I got in speaking distance of them they said that my scientific bee-keeper was in the cellar, with the door locked, so that none of the rest could get in, and they were obliged to take to the woods. I straightened the frames, put on the covers, and left them in the care of the "scientific bee-keeper" who had read Quinby. MAHALA B. CRADDOCK.

Vermont, Ill.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

BEES AND—SEED CORN.

I COMMENCED in the spring with one strong and one very weak colony. The weak swarm dwindled down to a mere handful; but I saved them by giving them frames of hatching brood from the strong swarm. The strong swarm threw off one swarm the 15th of June, which was all the increase I had. I took from the three, 100 lbs. of comb honey in one-pound sections, which I consider doing exceedingly well for so poor a season as we had here this summer. Both apple-tree and basswood blossoms were cut short by severe frosts.

I have a little matter in which I am undecided how to act. Last spring I sold some seed corn to a friend of mine. So little of it grew when planted, that the crop was a failure. The one I sold it to claims the seed was poor. I claim it was good, and the cause of the failure was due to the seed being destroyed by worms. I think I have very good reason for so claiming, from the fact that I sold seed corn to two other parties, both of which were well satisfied, and obtained good crops from it. Now the question with me is, Should I or should I not take pay for the corn I sold to the one that had the failure? Of course, the friend suffered quite a loss by the crop being a failure. But for all that, it seems to me I should not lose the price of my seed corn, it being successfully grown by two other parties.

B. H. BRADLEY.

Eddyville, N. Y., Nov. 28, 1881.

Friend B., this matter of seeds has been a good deal discussed, and there is a difference of opinion in regard to how far a seedsman's responsibility should extend. A few years ago a decision was made against a seedsman, because the crop did not grow, and you may have noticed that most of our prominent seedsman straightway put a note on their seed-packages, declining all responsibility. Where proof has been shown us that the seeds we send out did not grow, we have refunded the value of the seeds, or furnished more. But inasmuch as there is such a diversity of causes that may produce a failure of the crop, it does not seem to me as if the one who sells the seed should be held responsible, further than this. If two other parties obtained good crops from the same seed, it would seem as if this were evidence enough; but very likely your friend may have something to say on the other side. I think you ought to have pay for your corn, as you state it.

LEAVING THE ENTRANCE WIDE OPEN IN THE WINTER TIME.

IN GLEANINGS OF Dec. 1, page 820, you say of bees wintered outdoors, "They should by all means have the entrance so they can get out and in when the weather is suitable." Now, I know of instances where at sunshiny days in spring, bees would come out in large numbers; and if there were snow on the ground they would fall on it, and the owner would lose most of his bees. What do you think of it?

F. A. LAVOIE.

Montreal, Dec. 3, 1884.

I know it, friend L.; but after having tried shutting them up, or putting a wide

board in front of the hive to shade the entrance, and all such arrangements, for many years, I have decided that I would let them fly whenever they want to. If bees are in good health, and have not been fussed or "tinkered" with, I do not think they will lose enough at such times as you mention, to do any harm; any way, I am satisfied the harm done by fastening bees in at such times is greater than to let them "slide." I know Doolittle and some others have recommended closing the entrance of the hives at certain times in winter, and then opening them again when the weather demanded it. But our bees in chaff hives have wintered better with the entrance open at full width all winter, than in any other way. This matter we have tested by many experiments.

HOW TO PUT SIMPLICITY HIVES TOGETHER RIGHT.

I received my ten Simplicity bee-hives ordered from you through my friend N. H. Burns. So far they seem to be all right, as I have not put them all up yet. Such a time as I did have trying to understand the things and get them put up in good shape! I at last called in the counsel of my good wife, and every thing joined like a charm. I commenced four years ago with one hive. I now have eight strong swarms in common hives; have given them very little attention, and had a supply of honey, besides disposing of a few hives, and now I wish to commence at the first with Simplicity hives and A B C book, and give my bees careful attention. I have a fine ranch for bees as well as cattle, and hope to be equally successful. Unless a very dry season, we have a great variety of flowers, and bloom of trees. Cat-claw and mesquite blossoms make the clearest and best honey of all.

P. A. GRAHAM.

Albany, Shack. Co., Tex., Dec. 9, 1884.

Friend G., that is what I call good sense and wisdom. If many of us, when in trouble, practiced the plan given by friend G., I think many of our troubles would disappear like frost before the rising sun. We have the words of sacred Scripture for it: "It is not good that the man should be alone; I will make a helpmeet for him." When you asked your wife to help you out of trouble, you were fulfilling the command of Scripture; and if she is not already conversant with your work, and knows how to work intelligently, the fault is yours that you have not made her a partner in every thing that interests you.

WINTER FEEDING.

A most interesting article on sugar syrup for bees appears in the issue of Nov. 15. Not only is the subject fully discussed by Mr. Doolittle, but your own extended remarks on the same are excellent. The one point, however, on which some of your numerous readers may, like myself, desire yet more light is the mode propounded for candy feeding, and the possibility of successfully operating any day in the year. Assuredly this, if so, goes far to solve the problem of food supply. We need not be alarmed on finding hives light, in going into winter quarters, or having neglected to feed in time, or in finding, during winter, supplies run low. Simply put on a few cakes of candy, and all is well. No more fussing with feeders. The point is, will this disturbance of putting on the congenial supply, and excitement

at finding such abundant and suitable stores, not unduly stimulate, both rousing to activity or uneasiness, and to early brood-raising, then likely resulting in spring dwindling?

This facility for feeding, any day in the year, looks decidedly like a pretty long stride in advance, if it can be as readily managed as indicated. There is yet another point that may need to be put a little more plainly. You speak of confectioners' sugar. Confectioners use various grades. The standard granulated is mostly regarded as the proper quality for feed-syrup; but for this mixing with honey into the consistency of dough, a softer sort would seem more suitable, both for sticking together and for the bees licking or chewing the more readily. These gritty grains must give much labor to nibble off; besides, they do sometimes carry out crystallized pieces as unmanageable. Might not a good quality of soft sugar be less objectionable? Then, what about water for moistening? Wouldn't a little wide-mouthed bottle, with a piece of cloth over its neck in the midst of the candy lump, be very convenient to wet their tongues occasionally? I mean to experiment a little in the given plan, and shall also hope to hear of others trying and succeeding on the line of this honey-dough idea.

Toronto, Dec., 1884.

JACOB SPENCER.

Friend S., this matter of putting a bottle of water near the lumps of candy was, as you may remember, discussed and experimented on most thoroughly some two or three years ago. As a rule, I do not believe it advisable to give bees water until you wish them to commence brood-rearing in the spring. The candy and sugar laid on the frames will not, I think, excite the bees to undue activity in winter.

WHAT TO DO WHEN A MAN HAS A WIFE AND A BOY, AND IS IN DEBT.

I bought 20 acres of land, and built on it. Our house is small, 14x28 feet, but we make out very well. Our family is also small. I have a wife and boy and baby, 6 weeks old. We call her Chloe Mabel. How is that for high? I wish you would tell me how I can build the cheapest for my bees, and arrange the yard for them. I have a nice east hill-side for my bees and poultry-yard that will do the business I shall carry on, if I don't make a fizzle of it. I am considerably in debt, but will do my best to get out.

A. B. HOWER.

Mexico, Ind., Dec. 9, 1884.

Well, friend H., the first thing I would do if I were you, I would make up my mind that I would get in debt no further. As for the bees and poultry, if I could not scoop out some place in that eastern side-hill for them, without getting in debt any more, I would let them stay outdoors till spring. Probably the best place for the bees will be outdoors, protected from the wind, if you can manage that. If you can make a cave in the side-hill for the poultry, they ought to give you quite a lift by way of eggs now while they are high. If you had some old sash, so as to let in the sun and keep out the cold, it will do very well. Sometimes people in straitened circumstances say they can not get along without getting in debt more. In almost every case they can get along; and when they get used to it they feel all the better for it. Stop the accumulation of debt,

if it takes a leg to do it; and when you have got that mastered, you will find the matter of managing to pay a little every week or month is comparatively easy. Just make up your mind it has got to be done, you and that good wife of yours, and then put in and make things fly around for the sake of Chloe Mabel and her brother, if for nothing more.

FROM 5 TO 14, AND 30 LBS. OF HONEY.

The past season here was extremely poor. No rain between May 25 and July 25; then we got 1½ inches, then none till September 28; no good for bees. We wintered five last winter; no loss; took a little honey, 30 lbs., for a sweet lick, but fed 40 lbs. granulated-sugar syrup; have 14 in a house.

What personal experience have you had with the Carniolan bee? also the Syrian? I intend to try to teach our bees to work on red clover. Spray the bloom with water well sweetened with honey.

J. D. BEACH.

Coal Run, Wash. Co., O., Dec. 17, 1884.

Friend B., Mr. Benton has our order for some Carniolan queens, but we have had no experience with them. They come highly recommended, but so did the Syrian and Holy-Land bees.—You need not go to the pains of teaching your bees to work on red clover. Whenever there is honey in red clover they can reach, they will find it—you can rest assured of that. It occasionally happens, or, rather, we have occasionally a season, when this occurs, and very likely some varieties of red clover are more apt to have this profuse secretion of honey than others. The matter needs investigation and development.

THIEVES IN THE APIARY, ETC.

I have been in the bee business over ten years, beginning with one hive. My apiary numbers a little over 100 colonies. This is not a good honey section. White clover is just getting a start. The basswood did not amount to anything this year, and seldom does. The wind and rain in the fall spoiled that crop, consequently this has been a rather poor year. I increased over 50 per cent this year. During the past ten years I have learned much by experience. I have quite a number of little notions, etc., of my own, some of which may appear in GLEANINGS in the future. You express surprise in the last number, that any one should stoop so low as to destroy hives in order to get a little honey, which expression from a person of your age and observation is a surprise to me. The very meanest and most exaggerated thing that we can imagine, humanity will stoop to, and even lower. I am happy to say, however, that we have never lost any thing to speak of from honey-thieves. Some one entered the apiary three or four weeks ago and took off the covers from three hives, and laid them on the ground. I rather think they were looking for box honey, but they struck a "desert place" for that. The most mysterious thing to me is, why they did not put the covers back, and also why did they not take out some of the outside frames, which they could easily have done.

JOHN F. WHITMORE.

Anita, Iowa, Dec. 16, 1884.

Friend W., I think it a great deal better to have too good an opinion of humanity than too poor a one; and I insist still, that it is more ignorance than real badness of heart. Those who took the covers off your hives were looking for box honey. They did not

find any, and therefore they did no damage, more than to leave the covers off; and my opinion is, that it was more because they did not think any thing about it, than because they did it purposely. I once myself helped to eat honey that I knew was stolen from a minister's bee-hives, and I was a Sunday-school boy at the time. Had some good kind Christian friend taken me in hand just about that time, and presented to me the full aspect of the case in all its bearings, I believe I should have repented with tears, and perhaps gone to the minister and made reparation to the fullest extent in my power, and I believe it is much the same with those who went to your hives. It is lack of teaching, and, may be, lack of God-fearing teachers. The harvest is great, but the laborers are few.

FRIEND VANDRUFF'S UNCONDITIONAL SURRENDER.

My report this season will be small. I began the season with 18 colonies, with the majority of them weak. I doubled my number by feeding over a barrel of sugar. I took less than 200 lbs. of honey. The spring bloom was good; never saw it better, and the bees got a fair start, and I never saw a better show for white clover. The fields were fairly matted with it, and I expected a large yield of honey. There were plenty of bees, and a large increase of colonies. But, oh the dry season! Well, I almost got into Blasted Hopes. The white clover was just making a nice start, but it needed rain, and I was hoping for rain just in a day or two for a week or two; and seeing the clover all dying and drying up, and yet no rain, I had to make an unconditional surrender, and take off my section boxes, and make the best out of it I could. Yet I don't mean to give up; we don't often have such dry seasons; it is not the only pursuit that fails. I believe we bee-keepers can winter our bees with less expense and trouble than any farmer or stock-raiser can his stock. I now have 36 colonies prepared for winter, and I think they will all winter.

THE CARNIOLANS.

You wanted to hear from the Carniolans I got of Frank Benton. Well, the season was so dry I had a poor chance to give a fair trial. I did not get to try them in section boxes, but I believe they are very much inclined to swarm. They swarmed twice, as poor a season as it was for swarming. But a good season may make them all right. They are as quiet as any one could wish, yet I think albinos are as quiet. I have a colony of albinos I got last spring of S. Valentine & Son; they are beauties, and as quiet and gentle as kittens—that is, tame ones. They don't even scratch; likely they don't know how.

W. S. VANDRUFF.

Kirby, Pa., Dec. 10, 1884.

SUB-EARTH VENTILATION.

I shall probably send occasional subscriptions for GLEANINGS in future, as I am not only pleased with its excellence of practical information on apian subjects, but I am more especially pleased with its loftiness of moral tone. May God bless you in your editorial work, and aid you in keeping up the morals of the bee-keeping business.

I have devised a cheap house for wintering bees, which I think is as good as the more expensive ones. Admitting air through a drain, or any underground passage resembling a drain, is, it seems to me, consummate folly. You would not like to

have your bedroom filled with such air. My plan is to make the floor, walls, and ceilings, of hay, $\frac{3}{4}$ ft. in thickness. Outside of this is a wall of boards, and over it a roof. The wintering-house for this part of Canada must be cheap and warm.

T. HOWLAND.

Ormond, Ont., Can., Nov. 25, 1884.

Gently, my good friend H. If you have never used sub-earth ventilation, how do you know that the air that comes through the pipe is bad? In draining fields, the water that comes from our underdrains is as pure and sweet as any well or spring water, and the workmen often fix a place at the outlet to get a drink. Now, my opinion is that passing either air or water through the ground in no way injures it, either for breathing or drinking. In speaking of drains we often think of tubing put under ground for carrying off soap and water, and other slops from the kitchen. Of course, we do not want the air we breathe brought into the house in such a manner; but if it comes through a clean pipe, laid three feet or more under ground, where nothing gets into said pipe except the water that might percolate through the soil, I do not see how the air should be objectionable. The air in underground caves is, if I am correct, very pure, especially where there is good circulation, as there would be through our sub-earth pipe. Very likely hay would be good for walls for a wintering-house. With sub-earth ventilation, air is taken directly from outdoors, away off in the lots, perhaps, where there are no buildings nor smoke. This air simply passes through the underground pipe, and is in on way altered or changed in this passage, except to have its temperature raised to the temperature of the ground through which it passes. You suggest a caution which we thank you for; that is, our sub-earth ventilation-tubes must be so placed that no foul water from sink-drains can get into them. If it did, we might have typhoid fever or cholera right speedily.

DEATH OF ONE OF THE VETERANS.

W. W. Rowley, of Eaughalle, one of the largest bee-keepers in this part of the country, and one whom you have dealt with some, is dead; he died very suddenly at this place, when taking off some honey to market, to St. Paul.

HAVING NOTHING BUT YOUNG BEES IN THE SPRING.

There is a man in this neighborhood who winters his bees in a sawdust house (walls 14 inches thick). About the middle of the winter they commence breeding, and the old bees die off. He boasts of the amount of dead bees he carries out in spring, and says his bees are all young to begin work. He has had good success for several years.

I want that book on gardening, when I can get it and pay for it. We are trying to make ourselves "useless."

W. FULLER.

Woodville, Wis., Nov. 27, 1884.

We are very sorry to hear of the death of friend Rowley. His name has been for years a familiar one with us.—In regard to having all the old bees die off, I do not believe I should like that way, even if it does succeed well, for several seasons. I have seen them die off after the bees were set out of the cellar, at such a rate that the young ones turned in and followed suit also.

FRIEND HAMMON'S DIVISION-BOARD.

Herewith I send you the kind of division-board I have adopted for winter use. By "looking through the knot-holes" you will see a paper inside lining, then sawdust, that covered with paper, then the wood outside, then it is ready for use. I have put up 55 colonies of Italian bees, each hive put into a box with a space of three or four inches, and that filled with dry leaves. I use the Langstroth ten-frame hive. I have prepared them for winter this way, taken out the two outside frames, and substituted in their places the "sawdust" division-boards, and covered the frames with quilts my wife made by cutting up partly worn bed-blankets. The bees had a fine fly on the fifth inst., it being very warm.

Bristolville, O., Dec. 8, 1884. H. B. HAMMON.

I will explain to our readers, that this division-board is simply a common frame with thin sawed veneering nailed on each side. The veneering is such as is usually found on the back of picture-frames. This veneering extends beyond the ends of the frames so as to fill the hive, and also below the bottom-bar, so as to nearly if not quite strike the bottom-board. The device is hardly new; but the sheets of paper to put over the sawdust, and next to the board, are somewhat new. The board would be about as warm as a chaff-packed division-board, only thinner, and the expense would be considerably less.

RECIPE FOR HONEY-CAKE.

I saw something in GLEANINGS about honey-cake; and as I have been experimenting a little with honey I will send what we think a good recipe for honey-cake. Two cups honey, one cup sour cream, one-half teaspoonful of soda; flavor, mix quite soft. Some do not care for any flavoring, as the honey is sufficient. If you have not a better recipe you may publish this, as I know it to be good. This makes just a common every-day cake. Perhaps some may have a nicer one. We have GLEANINGS, and like it very much. I have put up all my fruit this season in honey, and have even made jellies with it.

MRS. L. M. HARDISON.

Santa Paula, Cal., Nov. 18, 1884.

MATERIAL FOR CAPPING BROOD-CELLS.

On page 804, Mr. A. A. Fradenburg's theory as to the material of which the caps to brood-cells is composed, and the manner in which it is obtained, is nearly as thin as the "pollen theory." I have seen all sorts of trash—sticks, sand, plaster, wire, paper, and any thing that happened to be in the way, fastened in the cappings, the bees' only object (seemingly) being to get a lid for the cells. They sometimes do very rough jobs of brood-capping when there is an abundance of other labor on hand during a heavy honey-flow. As to the bees "raking" a fibrous or lint substance from wood surfaces, if this is true in the brood-rearing season, when there is brood in 9 combs, and bees enough to cover only 6, I should expect to find nearly all the bees in a colony "raking hay," and, in accordance to bee nature, I should expect to find more of them on weatherworn basswood boards than on the front side of well-painted hives and pieces of glass which I keep leaning against the front sides of my hives.

I believe it has not been reported, that bees cap honey-cells with any thing short of wax, and we find the capping to some honey-cells that resemble that of brood-cells inasmuch as to defy distinction. And if we shut a colony in a glass box, allowing

them honey and water only, we find the capping of brood-cells pregressing as well, if not better, than before. I have seen new combs produced from basswood honey, that presented the appearance of a fibrous composition, but I remember that they were built by old bees, and at a time approaching a dearth of honey.

C. W. DAYTON, 114.

Bradford, Iowa, Dec. 4, 1884.

FEEDERS AND FEEDING—A CAUTION.

The hive of bees you expressed to me last June, was received on the 10th in good condition. The one you expressed to me in July, 1883, a fine big swarm, was led out on the 20th of June. Another young swarm was led out July 4. At the time of swarming, wet windy weather prevented the bees from working. I fed the young bees sugar syrup in tin cans, on their alighting-boards. This way of feeding started the old bees to robbing. The young bees would fight at their own hives, and would go to the old hives and fight there too. Their fighting lasted ten days; not one of them was beaten, but were all much reduced. The rest of the season, the bees in the old hive kept a standing army at the entrance of their hive, to keep the young bees from robbing them. I got no honey this season. I think they have plenty to bring them safe through the winter.

JOHN HAMSWORTH.

Sunny Meade, Assiniboia, N. W. T., Can.

Friend H., that is just about the way feeding works, if you are not careful. You just about express it when you say the old hives kept up a "standing army." Be careful about feeding.

WHAT TO DO WITH BEES THAT COME OUT AND DIE ON THE SNOW.

I should like to have one question answered through GLEANINGS, if you can give it room. Is there any way to prevent bees from coming out of their hives, and dying by the hundreds on the snow? Will it do any good to shade the hives?

E. D. BARTON.

East Hampton, Ct., Dec. 3, 1884.

Friend B., bees seldom if ever come out and die on the snow, unless something is the matter with them. It has been suggested, that sometimes they come out because the sun shines directly on a thin hive, and warms it up, when they would not come out if the hive were shaded. This may be so, but I am a little inclined to doubt it. However, I greatly prefer to have them in chaff-packed hives, not only to keep the sun from heating them up too quickly, but to keep the frost out as well. When bees have unwholesome stores, and are affected by dysentery, or some like disease, they come out and die on the snow in all kinds of weather, and I do not know that any thing can be done for them, unless it is to give them good honey in place of the bad, or, what is the same thing, sugar stores. A few bees will always come out, such as die of old age and other causes, and in a very powerful colony the number might be so great as to cause a novice to feel worried by it, when it is nothing more than what might be expected. A strong colony will probably throw out, say a handful of bees, after a cold spell of three or four weeks; and when these happen to be scattered about on the bright snow they give one the impression that the number is much greater than it actually is.

MORE LABELS WANTED.

The labels were received yesterday all right; accept my thanks for promptness. The pails are the nicest and cheapest I have ever had. I think you should get up a label to fit the pails. It is very necessary that the paper should go around the pails and lap, or they will peel off. I am doing very well; am averaging over 100 lbs. per colony each year, about one-half each of comb and extracted.

L. A. PENNOYER.

Winona, Minn., Dec. 25, 1884.

I know we need a nice lithograph label for each one of the nested pails we are selling; but to tell the truth, we have already so many different kinds of labels that a clerk has to be employed to look after them; and even then it is hard keeping track of what we have in stock, for we have made almost every thing that has been asked for in this line. Another thing, a lithograph label large enough to go around the four-quart pails will be a pretty expensive affair. We have Jones's labels that do very well for pint and quart pails, but none for the 2, 3, and 4 qt.; and as it costs about \$400 or \$500 to get out a nice lithograph label, as large as these we require, we should be obliged to buy them by the million, almost, to get our money back; that is, if we sold them at a reasonable price. Friend Jones monopolizes the matter so far, I believe, on his lithographic colored labels for honey-pails.

NOTES AND QUERIES.

LAST YEAR'S SECTIONS ON WHICH THE BEES HAVE MADE A START.

I HAVE 600 sections with full-size starters, that have been propolized. Will the bees use them again, or must I put fresh starters in? I got 116 sections with *some* honey in them—don't think they would weigh 75 lbs.

Elston, Mo., Dec. 6, 1884.

I. F. LONG, 5-17.

[Friend L., your sections containing *fdn.* partly built out are a great deal better than new ones. The same with those containing *some* honey. If any of it is capped over, uncap it before putting on the hive, and then they are just the thing to start the bees quickly.]

BEES, ETC., AT THE WORLD'S EXPOSITION.

Please add to the call for convention, that the *time* of exhibit of colonies of bees will only be during the *week of convocation*, and not as published in the Premium list.

J. P. H. BROWN.

Augusta, Ga., Dec. 12, 1884.

CISTERNS; A CRITICISM.

All should be interested in making cisterns, and in a pure supply of water. Putting the waste-pipe at the bottom, so the sediment will wash out, seems to be a taking idea with some. It is undoubtedly good, if true. I have not tried it practically, but should expect this waste-pipe to act as a siphon, and empty the cistern in case of an overflow. You can laugh all you want to, but it strikes me so, at first blush.

J. M. SHUCK.

Des Moines, Iowa, Dec. 1, 1884.

[Friend S., the overflow-pipe would act as a siphon were it air and water tight; but as this pipe is cemented only at the joints until it reaches the top of the ground, or a little further, there is no danger of its acting as a siphon, for plenty of air gets in at the highest point where the bend comes.]

CHAFF HIVES FOR WINTERING.

I have made 103 chaff hives this winter, and never will try to winter bees in this section any other way.

CLARK CHANDLER.

North Blandford, Mass., June 4, 1884.

REPORTS ENCOURAGING.

MY REPORT FOR 1884.

NUMBER of bees in spring; 116 stands, doubled back to 96 stands. Number now, 137 stands. Took 10,000 lbs. honey; 8625 extracted, 1525 lbs. comb. Honey all sold, extracted at 8 cts. at wholesale, comb 12½ and 13 cts. I had about 3 bbls. of "bug juice." It went with the rest; sold to cracker-factories at Cedar Rapids, Iowa. Shellsburg, Iowa.

ROBT. QUINN.

10 FRAMES AND 80 SECTIONS FILLED WITH BUCK-WHEAT HONEY IN ONLY 12 DAYS.

This has been a very good honey season with us; the spring was very backward, and our stocks dwindled till they became weak. I started with fifteen—seven in very good order, and eight weak ones. I had no swarms until the last of July, when we had two. The 5th of August we had five all come out at once, and alight in one place together, and I happened away from home that day, but they managed to get three of the five queens, and made three swarms of the five; but they were hives full instead of swarms, so I filled the hives full of frames and sections, 80 in each, and in 12 days one of those hives sent out a very large swarm. I happened away from home that day again, so the next day I thought I would give them some of the sections off the hive they came from, as I thought they would not need them on that hive, when, to my surprise, I found the whole 80 sections filled and ready to cap. They did not seem satisfied after they left the hive. They swarmed three days in succession, every time clustering, and we hived them until at last I returned about half of them to the old hive, and gave the other half to a couple of weak ones, and all was peace with them then. I suppose they swarmed for the want of room; but, why did they keep swarming? We increased to 21, which is the number we have now. We have taken off 1030 finished sections, and have quite a good many that were not finished. I never saw honey come in as it did in buckwheat-bloom; it would almost seem impossible that a swarm of bees could fill ten frames and 80 sections in 12 days, but that is the fact.

Accord, N. Y., Oct. 24, 1884.

WILLIAM PALEN.

FROM 3 TO 6, AND 300 LBS. OF COMB HONEY, AND NOT ENOUGH TO SUPPLY THE DEMAND, EVEN THEN.

This is my report for 1884: I had 3 hives of bees in the spring. I got 6 swarms of bees and 300 lbs. of comb honey from them. I sold 75 lbs. at 25 cts. a pound; the rest I sold at 12 cts. a pound, or 5 pounds for a dollar. I didn't have enough to supply the demand at that price. I sold the most of it in the shop where I work.

MARSHALL DARLING.

Waterbury, Conn., Dec. 1, 1884.

MY REPORT FOR 1884.

I commenced the season with 5 weak colonies; increased to 10 by natural and artificial swarming, all strong and well supplied with stores. I took about 60 one-pound sections, and extracted about

250 lbs., making 300 lbs. in all. Started with black bees in spring; bought 3 Italian queens, and made artificial swarms with them. I am aware that my report will look like small potatoes, and few in a hill, beside most of the reports from Texas, and I shall try hard to do better next year, although I think I have a poor location. We did not have any rain to do any good from June to October.

G. W. E. KELLEY.

Tanglewood, Lee Co., Texas, Dec. 22, 1884.

FROM 71 TO 175, AND 500 LBS OF HONEY.

I commenced the season with 71 colonies, half good, the rest below par, having sold most of my best colonies. I made 2500 lbs. of white-clover honey in one-pound sections, and 3000 lbs. of extracted basswood and white clover; comb honey all sold at 15 to 17 cts. per lb., extracted going off at 8 to 12 cts. I increased to 175 colonies reduced down to 140 by uniting all colonies with old queens to colonies with young prolific queens. I put 130 colonies into cellar Nov. 24, weather being three degrees below zero; chaff packed ten colonies on summer stands.

WM. ADDENBROOKE.

North Prairie, Wis., Dec. 8, 1884.

It seems to me, friend A., you ought to be satisfied, and it seems to me, too, that Wisconsin does "pan out" pretty well this generally speaking, bad season.

A PRETTY FAIR REPORT, "CONSIDERING."

As others are sending in reports, good and bad, some even worse than mine, I will let you have my first year's experience in apiculture. I commenced in July, 1883, with one colony in a boot-box, for which colony I paid \$3.00. They were black and cross. I transferred them a few days after getting them home, into a Simplicity hive, then bought a tested Italian queen of Dr. Griffith, for the sum of \$2.00; that changed the color and also the temper of that colony. One colony did not satisfy me, however, so I bought all the bees for sale near me, until I had 65 colonies. Among them were several colonies of blacks; but most were Italians. Several were as good as I ever saw. I took two colonies to the Belleville Fair and was awarded first premium. I have now almost got through Italianizing, and want no more blacks. The honey crop was rather short this last season, but I can not complain, as several of my best colonies gave me from 100 to 200 lbs. surplus, which was the result of early spring feeding, having the brood-chamber crowded with bees at the approach of white-clover bloom.

A WORD IN FAVOR OF SEPARATORS.

My first year's experience with sections (for I worked only for comb honey) leads me to the conclusion that friend Hutchinson knows what he is talking about when he says that separators can be dispensed with. I used them in 20 hives, with the poorest result. Those without separators went to work first, and finished their work best. Bees are all right up to date.

W. M. ROSS, 65-80.

Lebanon, Ills., Dec. 24, 1884.

Friend R., you did splendidly, especially considering the risk you ran in going in so heavily the first season. And now let me advise, or, rather, caution you, that if you do not look out you will have trouble next season. If you succeed in wintering well, I should say it will be safer for you to work for honey, and not continue to increase very much, until you get a little older in the business.

REPORTS DISCOURAGING.

I DON'T know but I am a candidate for Blasted Hopes just now. What bees I have (now united down to 12 swarms) I took from a man who owed me \$12.00, because I knew if I didn't take them I would never get any thing; and for lack of means to feed and care for them properly, I suppose they will die this winter. That isn't the worst feature of my "Blasted Hopishness," however. Over a year ago I had sufficient confidence in his honor to indorse notes with him to the amount of about \$150. I have already had to pay \$10 of it, and expect to have to pay the rest; and as I already had a pretty good load of debts of my own, I don't know but it will "smash" me. What makes me especially provoked with him is the fact, that although he can not pay a cent he can and does buy and chew nearly a dollar's worth of the very highest-priced tobacco every week, even if his children have to go destitute of necessary clothing, etc. Brother Root, go on in your good work against the abominable stuff. I am not as good a Christian as you are; and sometimes when I think of such things I lose some temper, and say hard words. Don't print this, friend R., at least not with my name or address. I suppose probably it is foolish to write any thing about it; but you always seem to be so friendly to everybody that it seems like talking to an old acquaintance.

X. Y. Z.

Friend X. Y. Z., do not get blue over your misfortunes. There is a moral to your story that may do somebody else some good, if it does not help you any; and the moral is, to stand on your own feet. Never ask anybody to indorse with you, if it is a possible thing to avoid it, and then you never need indorse with anybody else. If any of your friends feel hurt, and take offense because you refuse to do such a favor for them, they are not real *true* friends. Very likely, sooner or later they will be glad you did refuse to accommodate them. Don't ever let such a thought enter your head as being "smashed." I am fully convinced that people sometimes give up, and let things go, when resolute holding-on would put them in good shape. Now, just mind what I say, will you? Let this be a lesson for you, but do not give up one bit.

SOMETHING ABOUT THE REASON WHY WE DO NOT GET ANY MORE THAN WE DO.

To-day, on Thanksgiving-day, I feel inclined to think more about Blasted Hopes than about thanks, as the season around here can be called a poor one. I began the season with 18 colonies, and had 15 swarms, so that I have now 33 colonies. These gave me 354 lbs. comb honey, and 150 lbs. extracted. I don't think many bee-keepers from this part of the country will report, as the honey-crop is a very small one. A while ago I had a talk with a stranger, whom I happened to meet, and who claimed to be a bee-keeper with 80 colonies. While talking I asked him if he reported his honey crop; he said:

"No, sir, I won't."

Inquiring more, he replied:

"Yes, if it had been a good year I would have reported; but if I look at the bee-papers, and find that some who had a large crop say that they had so and so many years' experience, and they had managed so as to have much surplus; meaning that, on

the other hand, they who got only 10 lbs. surplus per colony don't understand the business, and that keeps many from reporting, any way. Even with the experience of 100 years, and a management superior to all others, if there is no nectar in the flowers, nobody can expect much."

He turned, and said good-by. I asked his name; but he said, "No, sir; I won't tell you my name, lest you mention it in one of those papers; but perhaps next year, if I should have a good crop, I will tell you, and report myself. It depends on our Lord's blessing."

So he left me, and I had to think about it.

Harvard, Ill., Nov. 27, 1884.

CHAS. FAUST.

Friend F., I know it is much as you say; but it is not only so in bee culture, but in every thing else, and I don't know how to remedy it either, so long as the friends declare they won't report.

BEE CULTURE IN FLORIDA.

A REPORT FROM ONE OF THE GIRLS WHO FORMERLY HELPED US IN THE OFFICE.

I AM still happy in the work with the bees. I am now rearing queens; and with a supply of pure drones, and at a time when wild or common bees are taking their winter rest, I keep mine working by feeding.

THE SPIDER PLANT IN FLORIDA.

Plenty of pollen coming in, and one large spider plant that I succeeded in keeping over the hot season is now full of bloom, and starts the bees out at 5 P. M., very much like robbing. I should be glad to have an acre blooming now.

THE PARTRIDGE PEA.

During the season of the partridge-pea bloom, the bees paid no attention to figwort or spider plant, or even the dripping banana-blooms, though the amount of honey seen on pea-bloom seemed very small beside the other plants.

I inclose a sample of bloom of partridge pea; I also send a small package of seed, as I think you would like to try it, perhaps.

Mr. Hart, of Smyrna, does not have much faith in the high pine land for bees; but I have found a long list of honey-producing plants in this region; and with the cultivated groves and gardens, and the delightful sunshine, bees certainly ought to do well, and I believe they will.

I scatter your price lists among neighbors, and there seems to be quite a boom for bees this year in Florida.

NELLIE ADAMS.

Sorrento, Florida, Dec., 1884.

Thanks for your report, friend Nellie. And it is really true, is it, that one who used to work at a desk right among us is now succeeding in that far-off land of flowers? By the way, does not the spider plant grow continuously from year to year with you? I have been told, that in California, tomatoes grow like a shrub, and keep bearing; and as the spider plant is so like the tomato in its habits, I should suppose this would be the case, and that if supplied with plenty of water it would bloom for months uninterruptedly. Can you tell us if this is so? We want to know more about that banana with dripping blooms. You speak of feeding. About how many months in the year will your bees take feed? Certainly not when these plants you mention are in bloom?

FRIEND BAUM'S TROUBLE.

FEEDING BEES WHILE THEY ARE IN THE CELLAR. ETC.

I HAVE been wanting to write to you for some time, but I dislike to bother a man as kind as I think you are. But the last GLEANINGS was too much for me, where you speak about asking advice of an old farmer. Now, I am an old soldier, and not able to do much work, in consequence of a disability contracted in the army. I am neither poor nor rich, but have a good little farm, a good wife, and three little boys. Two years ago I thought I would try bees, and paid \$50.00 for ten good strong stands of bees. Well, I was green; but I increased to 30, and sold \$75.00 worth of comb honey, and had plenty for my own table. Then I had such glorious fun in hiving the new swarms, and lost only the first one.

Late in the fall I put them in my cellar, which is very large; and when spring came I had lost one. I put them out, and then lost five or six by spring dwindling. I could have saved them, if I had had sense enough to feed them. But, all right so far.

This summer we have made but little honey; and this fall I found I had 14 that had but little honey. I got a barrel of A sugar, and fed them as they seemed to need it. I fed them by putting the syrup in shallow pans on top of the frames, but under the hood or upper story. I fed at night to avoid robbers. Two weeks ago I put them in the cellar, and since they have been in there they won't eat their feed. They seem to be lively, but I know they have almost no honey. Now, I have bothered you all this time to ask you, "How shall I get them to eat?" I do not wish to double them up, and I should like to keep them until spring, for I know that bees will be scarce here in the spring. I keep the cellar dark.

GERMAN CARP.

I see you have a carp-pond too. I have had one two years. We took out several this fall to eat. They were about 18 inches long. They are not a very good fish, but still they do to eat. We still have one in a box, that we expect to eat on Christmas.

GEORGE W. BAUM.

Delphi, Ind., Dec. 22, 1884.

Why, friend B., you have been through one winter and summer, and, I should say, managed nicely. It would have been better, of course, had you commenced feeding a little earlier. Your plan of feeding was all right, and a very few days with such an arrangement ought to have given them enough for winter. There seems to be a difficulty in feeding bees in the cellar; for even if they do take it, it is apt to make them uneasy and discontented. Are you sure they have not enough to last them until we have warm weather enough so you can set them out for a fly? After the flight they will eat the feed all right without any trouble. You might try feeding candy, as advised in the A B C book, and in our recent back numbers.—Thanks for your item about the carp-pond. But, you are the first one who has reported that carp are not very good for food. So they can be kept some time in a box or tub, can they? This is an important item.—I think your bees will certainly take the syrup, especially if made quite thick, before they will starve. They will certainly eat candy any way, if you put it in small lumps right over the cluster.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT.

EDITOR AND PUBLISHER.
MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, JAN. 1, 1885.

Bees was as serpent, and harmless as doves. —MATT. 10: 16.

We will pay 10 cts. for April 1 GLEANINGS, 1884.

WE are happy to tell you that we commence the new year with 5145 names. You may remember, that last year we started with 4275. May God bless you, friends, for the ready support you have given my poor efforts in your behalf.

SMITH'S HONEY-RACK.

THE honey-rack shown on page 841, last issue, belonging to friend Smith, we shall not offer for sale, as he prefers to supply the trade himself. His circular, which he will be glad to mail you, gives full prices and particulars as to how the racks are to be used.

DECLINE IN PRICES.

I ALWAYS feel happy when I can offer you certain lines of goods that are greatly called for, at a reduction. Now it seems to me, friends, it is a pretty good idea to have a journal that is able to tell you twice a month all about the decline in prices of such things as bee-keepers are obliged to buy, more or less. Don't you think so?

REDUCTION IN HALF-POUND JELLY-TUMBLERS.

WE can now furnish a neater and prettier tumbler than we ever had before for 3 cts. each, 25 cts. for 10, \$2.40 per 100, or \$22.50 per 1000. These are what are usually sold as jelly-tumblers with tin top. By laying on a piece of paper of the proper thickness, before the top is put on, the tumblers can be shut as tight as a corked bottle.

MUELLER'S LIFE OF TRUST.

IT has always pained me, in showing this book and explaining it to friends who were learning to trust in God, to be obliged to tell them the price was so high. We are now enabled to offer it, neatly bound in cloth, for only 60 cts. If wanted by mail, postage will be 10 cts. extra. This is the latest edition, with engravings of all the buildings, etc.

DISCOUNTS UNTIL JANUARY 15.

INSTEAD of 3 per cent, the discount will be 2 per cent off on orders for goods of any description, received before Jan. 15. The regular discount of 10 per cent that we have been giving on fdn. and sections will also be held open until Jan. 15. We do this as an inducement for sending orders now instead of during the rush a little later. The offer of 10,000 Simplicity sections for \$10.00 is also continued till the fifteenth.

DATE*YOUR PRICE LISTS AND CIRCULARS.

AS for me, I like to see every thing dated, and I like to see advertisements and circulars tell what time of year the goods are fit to send out. I have been watching price lists of plants lately, to see at what time of year small-fruit men are ready to

send out strawberry and raspberry plants; but there is not a single circular that tells when they will be ready. It is just my luck to be sending for something out of season. Why not state in your price list just when you will be ready to send strawberries, eggs for hatching, carp for stocking ponds, etc.? You see, we are green in the business, and are almost always "wanting to know, you know."

BEES AND CIDER-MILLS.

ONE of our bee conventions proposes to petition the Legislature to abate the nuisance of cider-mills; that is, the nuisance to bee-keepers. I am afraid, friends, if you start out that way the cider-mill men will be sending a petition to have the nuisance of bee-keeping abated. The bee-friends suggest that the cider-mill men be obliged to keep the bees out by screens of wire cloth. Well, such screens will fix the matter, without doubt; but, who is to pay for them? The friendly way would be to divide the expense between both parties, or let the party making the most complaint bear the larger part of the expense. I think, for the sake of peace and harmony, I would furnish the wire cloth and put it on myself. It seems a sad thing for neighbors to appeal to law or legislation in defense of their separate industries.

SPIDER PLANT AND FIGWORT.

IT is a fact, friends, that if you want to have either of the above plants in perfection the first year, they must be started in a greenhouse, or in boxes by the window. By doing this you will get figwort to yield a full crop of honey the first year, and the spider plant may be made to commence blossoming outdoors in June; and if the ground is rich and deep, the plants will grow to a monstrous size by September or October. It is a peculiarity of the spider plant, that it continues to grow and put forth blossoms just as long as the season will permit. So long as the present demand for the seeds continues, these will pay all expense of cultivation, to say nothing about the honey. If any one can furnish us seed of the *Epilobium angustifolium*, or, in fact, any one of this family of "purple fireweeds," as they are sometimes called, we shall be very glad to get them. See engravings on page 726.

A VERY PRETTY PRICE LIST FOR A SMALL SUM OF MONEY.

FRIEND A. L. Swinson, of Goldsboro, N. C., has just had a very neat job done at our office, in the way of a price list on a single sheet of GLEANINGS paper. He had 20 lbs. of paper, which makes about 4000 sheets. The regular rate would be \$5.00; but as about two-thirds of the sheet was covered with matter in fine type, we charged him \$8.00 for the 4000. This would be at the rate of 5 circulars for a cent. The unoccupied portion of the sheet forms the letter-head, and it is closely ruled, so that a good deal of matter can be put on when need be. The blank side of the sheet can also be used for writing, so that friend S. can give every correspondent a price list every time he writes. If you want to see what a neat job we can get up for five for a cent, just ask friend S. for a sample. Of course, we can not furnish them at this very low price unless 4000 or 5000 are ordered at a time.

A PRACTICAL TREATISE ON BEE CULTURE.

THIS is the title of a new book from our friend Rev. Wm. Ballantine, of Sago, O. Although the book does not contain much that is new, friend B.

has done his work well, for he is a man of talent and education, and, I believe, a successful bee-keeper. One of the new features we find in the book is a home-made circular saw, illustrated and described. The engraver has, however, made very bad work in picturing the implement, and I am sorry to say that his printers have done wretchedly in the get-up of the book. I do not believe it pays, friends, to have books made at offices unaccustomed to such work. Perhaps friend B. will have out a new edition soon, with these typographical errors and faulty presswork remedied. Perhaps these things will not be noticed so much by those who do not make printing a business. The book is mailed, in paper covers, for 50 cts.; cloth bound, 75 cts. See advertisement.

THE PROSPECTS FOR 1885.

GLEANINGS, with all its faults and failings, even during this time of general depression in business, is already beyond what it ever was before in the way of a subscription list. I feel very grateful, friends, to think we are able to start out with the first issue with almost a full subscription list. Our mails are so heavy now that it is about all I can do to read the *business* part of it each day, let alone reading the articles that are contributed for publication. A great portion of these will doubtless have to wait until a little later in the season before we can find a place for them, as has happened almost every year of late. When the friends send in their subscription it comes quite natural for them to send a report or article, and we are glad to have them do so; and even though we can not use them all as soon as they appear, they are, most of them, just as valuable a few months later. It has been the general impression, that 1884 had given a rather poor crop of honey; but the reports that come in with the subscriptions seem to me to indicate that the crop has been at least a fair one. There are bee-keepers enough in our land to give a fair support to all the journals; and bee-journals, like individuals, differ widely. Therefore, friends, if one journal does not please you, quietly drop it and take another. So far as I am concerned I do not expect—in fact, it would be strange if GLEANINGS did suit everybody. For my part I am quite willing you should take some other, if you prefer it; and whenever I meet you I will try to be just as willing to extend a neighborly hand as if you were one of our own subscribers.

GROOVING SAWS THAT SMOKE.

SEVERAL of the friends speak about having trouble with saws for grooving the ends of the bolt of plank for making section boxes. The trouble is, that you have too many teeth in your saws, or they are not filed in the proper shape. Now, then, friends, it is very important to have this matter exact. We have had years of experience, and know all about it; and if you do just as I tell you your teeth won't smoke, and one man can push the bolts over the saw, without fatigue either. The teeth must be large. Small ones fill with dust, and clog up. For a six-inch grooving saw, the points of the teeth should be fully three-fourths of an inch apart, and they must be filed so the shape will be according to the diagrams given in the ABC book. We have sent out saws that were not made as they should be, before we knew any better. In many cases the best way to fix the saw will be to take out every other tooth. If they are a little more than three-fourths

of an inch apart, it would not matter. A good stout gummer or emery-wheel is then needed. Where the fault has been ours, I will pay the expense of fixing them.

DAMAGING A BEE-KEEPER'S REPUTATION BY ACCUSING HIM OF ADULTERATING HIS HONEY.

My friends, if your reputation is what it ought to be, I do not believe a slander can hurt you in the long run, to any great extent. Such stories do not often stick long to the name of a good man. Instead of getting greatly stirred up about this matter of adulteration, be so frank and open in your business, and so willing to let everybody see what you are doing, and how you do it, that when any such charge is made against you it will of itself recoil back on the one who started it. I can not remember that I ever knew a good man very much hurt by stories circulated about him. There are people in almost every neighborhood, whose standing is such that nobody thinks of accusing them of such work. Well, your business is to set quietly about it and make yourself one of that kind of people; and then if anybody accuses you wrongfully it will be like throwing muddy water on a duck's back. It will slip off so quick that nobody will notice it, and even you yourself will not be conscious of having been harmed.

BEES AND QUEENS DURING 1884.

OUR queen-clerk reports as follows: Queens sold during 1884, 3506. Of the above number, 2408 were untested queens. Pounds of bees sold, 470. As a great part of them (perhaps the greater part of the bees and queens) were sold during the spring months, the average price would be perhaps \$1.50 each for the untested, and, say, \$3.00 each for the tested queens. The average price of bees by the pound was perhaps \$3.00, making a sum total of bees and queens about \$8356. The tested and select tested queens were all reared in our own apiary, or in that of Neighbor H.; but it is impossible to say how many of the untested queens we reared, as in the early spring months we bought queens from the South in large quantities, and introduced them to our hives. Probably one-half of the whole number of untested were of our own raising; therefore if we deduct \$1800 for untested queens purchased from the South, we shall have about \$6780 as the proceeds of our own apiary, devoted entirely to raising bees and queens for the market. We commenced the season with about 150 colonies, and added by purchase, 125; so you can form some idea how well it pays to rear bees and queens for the market. Labor all together cost perhaps \$1000, including cost of correspondence.

CARP IN OHIO.

Two or three years ago, Mr. E. B. Blakeslee, a neighbor living within a mile or two, got some German carp, and put them in a pond containing perhaps 1½ acres. Mr. B. is one of our bee-keeping friends, as many of you may remember. Well, I had not heard about his carp for some time, but to-day he informs me that his pond is so full there is hardly room for all of them, and that in warm weather they may be seen along the shores in great numbers. If you keep perfectly still, great big fellows will rise up in full sight, but disappear at the first movement. And now comes the wonderful part of friend B.'s fish story. If you keep still long enough, you may often see them stick their heads out of the water along the banks, to pick grass:

and when I laughed at this new feature, he said with great earnestness he could assure me the herbage was kept clean, clear around the pond. You see, they want vegetable food, and he has not provided it for them, and so they come around the water's edge as cows go around the corn-field, nipping off every thing within reach. He says they are the best fish for food he ever ate in his life. They have used perhaps half a dozen of them, some of them great big strapping fellows. His pond has no running stream, but is simply a cavity between the hills, filled with rain water. He has had a large-sized carp for some time in a large tub or tank, perhaps 8 feet across, where he waters his cattle and horses, and his dog sometimes tries to worry it. The carp and dog make a regular show of fight on both sides. When you come to see me we will take the horse and buggy, and go over and look at all these funny things, providing it is warm weather.

SUPPLY DEALERS, AND THE BRADSTREET MERCANTILE AGENCY.

OUR friends may not all be aware, that as soon as they get to doing business, and begin to advertise bee-supplies, their standing will soon be quoted in Bradstreet's Mercantile Agency. As a rule, these different agencies endeavor to give the best report of a man that they can consistently; that is, without doing harm by recommending a man who is not worthy of confidence. I need hardly say, that it behooves every one to work for a good record or report. Well, we are, at the present time, having quite a little business with the Bradstreet Company; and as we are better able, perhaps, to quote the standing of the bee-keepers than any other institution in the world, this company desires us to correct their reports when they are wrong. Now, I am very sorry to be obliged to tell them that they have got any bee-man too high; but when public safety demands it, we shall do this without fear or favor. The man who will not answer inquiries in regard to bills he is owing is not worthy of being reported trustworthy. A year ago I mentioned that there were two parties contracting debts for honey, who could not or would not pay. I believe these two parties have made no new debts since then; but there are one or two others whose names have appeared in the bee-journals, even in the pages of GLEANINGS; and these men have obtained credit, probably because we had permitted their articles to appear in print, and it begins to look as though public safety demanded that our friends should be warned against trusting them. I shall be very sorry, as I have told you, to be obliged to do this; but it is not only right and proper, but it is customary in all kinds of business. It has often been said, that bee-men are a little above the average in intelligence and respectability. Can't we keep so clean a record that the same may be said in regard to promptness and responsibility?

ADS TO THOSE WHO FIND THEIR CORRESPONDENCE BURDENSOME.

WHENEVER you have occasion to write to certain parties frequently, it will be quite a help to have addressed and stamped envelopes lying handy, so that all you have to do is to slip your letter into one of these envelopes, and it is ready for the postoffice. This also saves mistakes in addressing your matter. Quite a breeze happened at our postoffice a few days ago, because a man sent a letter containing money, and forgot to put on the State. Another

party even sent for the postoffice detectives, to have them recover a lost letter; and when found, the woman who sent it addressed it, by mistake, to a firm that had no existence. Now, then, how shall we get a supply of envelopes and postal cards with the addresses plainly printed? Why, let each man who has something to sell furnish them to his customers free. Our clerk who sends out orders, by my advice wrote to the principal firms of whom we buy goods, and asked for a few envelopes bearing their name and address. Almost without exception they came promptly; and where we have been in the habit of sending a good many orders, they were all stamped ready to mail. We finally found we had so many of them, that Mr. Gray made a sort of revolving book-rack, with pigeon-holes in it. There are 48 of the pigeon-holes, and a great part of them are now full, and the stamps that are on the envelopes will go a good way toward paying for the whole institution. Now, then, if we want to get an order off in a hurry, we just jot it down on a piece of paper, and push it into the proper envelope, and it is all ready for the postoffice. Any man who is doing business can well afford to furnish stamped envelopes to those who buy goods of him. Another thing: It takes a mental effort to remember addresses, and write them right. By the arrangement I have suggested, a great part of the labor of correspondence is done by the printing-press, and done nicely. Every clerk in the office now has envelopes and postal cards printed to all parties with whom she is likely to have much business.

CONVENTION NOTICES.

The Champlain-Valley Bee-Keepers' Association will meet at Addison House, Middlebury, Vt., on Thursday, Jan. 8, 1885. J. E. CRANE, Sec.

The annual meeting of the Maine Bee-Keepers' Association will be held at Dexter, Me., Jan. 20, 21, and 22. F. O. ADAMS, Pres. WM. HOYT, Sec.

The 7th annual meeting of the Nebraska State B. K. A. will be held at Tecumseh, Neb., on Wed., Thurs., and Friday, Jan. 14, 15, and 16, 1885. M. L. TRESTER, Sec.

The Mahoning-Valley Bee-Keepers' Association will hold its next meeting in the Town Hall at Newton Falls, on the third Thursday, Jan. 15, 1885. The meeting will be instructive as well as interesting. Lordstown, O., Dec. 15, 1884. E. W. TURNER, Sec.

The North-Eastern Ohio and North-Western Pa. Bee-keepers' Association will hold its sixth annual convention in the Y. M. C. A. Rooms, corner of 10th and Peach Sts., Erie, Pa., Wednesday and Thursday, Jan. 14th and 15th, 1885. First-class hotel accommodations at the Wilcox House, \$1.00 per day, to those attending the convention. A general invitation is extended to all. C. H. COON, Sec. New Lyme, Ohio.

NORTH-EASTERN BEE-KEEPERS' CONVENTION.

The sixteenth annual convention of the North-Eastern Bee-Keepers' Association will be held in the City Hall at Syracuse, N. Y., on the 21st, 22d, and 23d days of January, 1885. The executive committee are determined to maintain the high standing and enviable reputation the association has justly gained in the past, and proposes to outdo all former efforts, at the coming convention. The meeting will surely be the largest and most interesting ever held in America. No bee-keeper can afford to stay at home. All are invited. All implements of the apian sent to the society will be properly arranged, to compare favorably with others on exhibition, and will be disposed of or returned as the owner directs. Reduced rates for board at hotels. L. C. ROOT, Pres.

GEO. W. HOUSE, Sec.

APIARY FOR SALE.

In good location, with 70 colonies of bees, all in first-class condition, all on Simplicity frames; with 3 imported queens, my own importation. My reason for selling is, I have a large apiary in Southern Arkansas, and it is too far to give attention to both of them. If anybody wants to buy a good apiary, with fixtures, every thing that you want and need, hives, sections, honey-extractor, honey-knives, smoker, 150 hives, etc., here is a good chance. Bees are Italian, Holy-Land, and Syrian. All first-class. Price on application. Address

LOUIS WERNER,

24-12d Edwardsville, Madison Co., Ill.

QUEENS BY RETURN MAIL. I am now up with my orders, and can send by return mail. Send me your orders and help me out of the fire. J. T. WILSON, Nicholasville, Jessamine Co., Ky.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column. 3dtd

Established 1855.

HEADQUARTERS BEESWAX

We have constantly on hand a large stock of Domestic, Imported, and Refined Beeswax in original shape, which we offer to manufacturers of Comb Foundation at lowest prices. Write to us for prices, stating quantity wanted. Address

R. ECKERMANN & WILL.

Beeswax Bleachers & Refiners.

SYRACUSE, N. Y.

N. B.—We have low freight rates to all points on quantities. 24-11db

WANTED.

A competent and reliable man to take an interest in, or as employ in an Apiary and Nursery combined. Best of references given and required. 24-1d Address E. L. SINGLETON, Flemingsburg, Ky.

FLAT - BOTTOM COMB FOUNDATION.

High side-walls, 4 to 14 square feet to the pound. Circular and samples free.

J. VAN DEUSEN & SONS.
11fd Sole Manufacturers,
SPROUT BROOK, MONT. CO., N. Y.

VANDERVORT COMB FOUNDATION MILLS.

Send for samples and reduced price list.
24tdb JNO. VANDERVORT, Laceyville, Pa.

BEE - HIVES!

The Cheapest Hives, Sections, and Frames, Made and For Sale by
24tdb T. A. GUNN, Tallahoma, Tenn.

WANTED. I want a correspondence with some one who can give good reference, and wants to buy or rent a farm and apiary; or either; or work for wages. A. W. MATTHEWS,
24-5db Potts' Station, Pope Co., Ark.

MUTH'S HONEY-EXTRACTOR, SQUARE GLASS HONEY-JARS, TIN BUCKETS, BEE-HIVES, HONEY-SECTIONS, &c., &c.

Apply to CHAS. F. MUTH, CINCINNATI, O.
P. S.—Send 10-cent stamp for "Practical Hints to Bee-Keepers." 11fd 3btd

BEE-HIVES, SECTIONS, &C.

Our New Shop Completed, and Machinery at Work.

We claim the best facilities for furnishing supplies in the South-East. Our Factory will be equipped with the best and latest improved machinery, which will enable us to furnish our goods up to the times, and we will furnish all kinds at very reasonable prices. Parties needing supplies would do well to see our prices before buying.

QUEENS AND BEES FOR 1885.

The Albinos Ahead, and We Make a Specialty of Them.

Those who wish early queens should order early, as orders must be filled in rotation.
For prices, address

S. VALENTINE & SON,

HAGERSTOWN, MD.

BEES

For Pleasure and Profit. A new book of 172 pages, Profusely illustrated, and up to the times. By Rev. W. Ballantine. Price 50 and 75 cents. Address the author, NEW CONCORD, MICH. CO., O.

HALF A MILLION READY

A SPECIAL OFFER.

We will sell pound sections during January at the following prices:

Per one thousand,	\$ 4 50
Per five thousand,	21 00
Per ten thousand,	40 00

2d BERLIN FRUIT-BOX CO.,
Berlin Hights, Erie Co., O.



DADANT'S FOUNDATION

is asserted by hundreds of practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sag, most regular in color, evenest, and neatest, of any that is made.

It is kept for sale by Messrs: A. H. Newman, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; Dougherty & McKee, Indianapolis, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Wm. Ballantine, Sago, O.; E. S. Armstrong, Jerseyville, Ill.; H. Drum, Adelphi, O.; Arthur Todd, Germantown, Philadelphia, Pa.; E. Kretschmer, Coburg, Iowa; E. F. Smith, Snaymas, N. Y.; C. E. Dade, Mortonsville, Ky.; and numerous other dealers.

Write for samples free, and price list of supplies, accompanied with 150 Complimentary and unsolicited testimonials, from as many bee-keepers, in 1885. We guarantee every inch of our foundation equal to sample in every respect.

CHAS. DADANT & SON,
Hamilton, Hancock Co., Illinois.

BE SURE

To send a postal card for our illustrated catalogue of **APIARIAN** Before purchasing **SUPPLIES** elsewhere. It contains illustrations and descriptions of every thing new and desirable in an apiary.

AT THE LOWEST PRICES.

ITALIAN QUEENS AND BEES.

J. C. SAYLES,

1-1205 **Hartford, Wisconsin Co., Wis.**

1885 ITALIAN QUEENS. 1885

6 WARRANTED QUEENS FOR \$5.00.

Write for Circular.

J. T. WILSON,
NICHOLASVILLE, KY.

FOR SALE.

I have 2500 lbs. of extra clover and basswood honey mixed (mostly clover) put up in barrels and half-barrels, that I will sell at 8c per lb., delivered at depot here. Honey well ripened and capped before it was extracted. Barrels are oak, iron bound, painted, and waxed, and hold about 350 lbs. each. Will sell in quantity to suit purchaser. Sample sent if desired, package included.

FRANCIS R. JOHNSON,
Union City, Branch Co., Mich.

FOR SALE.

I have for sale to the highest bidder, 300 one-pound boxes of white-clover honey, with Jones labels; also two 55-lb. cans of fruit-blossom honey, for Italian Bees. Address

H. M. MOYER,
Hill Church, Berks Co., Pa.

I WANT TO EXCHANGE

Langstroth Simplicity Hives in flat, Sections, Cases, Brood-Frames, or white-poplar sections, for Italian Bees. Address

J. B. MASON,
Mechanic Falls, Maine.

BEE-HIVES,
ONE-PIECE SECTIONS,
COMB FOUNDATION,

—AND—

Bee-Keepers' Supplies Generally.
Price List Sent Free.

1-11 1mo

J. J. HURLBERT,
Lyndon, Whiteside Co., Ill.

FOR SALE.

A P. H. P. wrought iron tubular boiler and engine, in working order. Price on cars, \$115.00.

1-4db Address **J. D. ENAS, Napa, Cal.**

RED-CLOVER
BEES and QUEENS

If you want Italian Bees that will work on red clover, and that are gentle to handle, you can get them of me. Send for my circular. It tells you how to successfully introduce queens, and of the *Safe Introducing and Shipping Queen-Cage.*

Address

F. BOOMHOWER,
Gallupville, Schoharie Co., N. Y.

WANTED.

A good position for an apiary, with about 5 or 10 acres of land, with or without bees. Address, with full particulars,

M. L. TAPLIN,
Adell, Sheboygan Co., Wis.

Basswood-Trees.

Basswood-trees 1 to 3 feet high. . . \$1.50 per 100
Hard-maple trees, 3 to 5 feet high. . . 1.50 per 100
Mountain-ash, ornamental, 3 to 5 feet, 10 cts. apiece.

Address **HENRY WORTH,**
14fd **Borodino, Onondaga Co., N. Y.**

DADANT'S FOUNDATION FACTORY. WHOLESALE and RETAIL.
See advertisement in another column. 3btfid

PASTEBOARD BOXES

FOR ONE-POUND SECTIONS OF

COMB HONEY.



This box has a bit of "red tape" attached to it to carry it by. It makes a safe package for a single section of honey for the consumer to carry, or it can be packed in a trunk, if he wants. It can be opened in an instant. The price of the box is 2 cts. each, set up; in the flat, 15 cts. for 10; package of 25, 35 cts.; \$1.20 per 100; or \$11.00 per 1000; 10.0-0, \$10.0. Colored lithograph labels for putting on the sides, two kinds, one for each side, \$3.50 per 1000. A package of 25, labeled on both sides, as above, 60 cts. By mail, 30 cts. more. They can be sold, labeled on one side or both sides, of course. We have only one size in stock, for Simplicity sections. Sample by mail, with a label on each side, 5 cts. If you want them shipped in the flat, labels already pasted on, the price will be one cent each additional, for labels.

A. I. ROOT, Medina, Ohio.

JOB LOT OF WIRE CLOTH

AT GREATLY REDUCED PRICES.

Such a brisk demand has sprung up for this, and our customers seem to be so much pleased with the goods, we have succeeded in getting another still larger lot, one of the largest manufacturers of wire cloth in the world. Please bear in mind that the only way in which we can afford to sell it at the very low price of 1 1/2 cts. per sq. ft. is by selling the entire remnant just as it is put up. We have now in stock the following pieces. As fast as it is sold, each piece is crossed out, and the next issue will show what remains.

Width, 8 inches. 3 rolls containing respectively 50, 50, and 60 square feet.
Width 10 inches.—1 roll, containing respectively 72, 70, 65, and 75 square feet.
Width, 11 inches.—One roll, containing 80 square feet.
Width 12 inches.—5 rolls, containing respectively, 80, 100, 90, 90, and 100 square feet.
Width, 14 inches.—1 roll, containing 116 square feet.
Width, 16 inches.—4 rolls, containing respectively, 60, 150, 130, and 148 square feet.
Width, 20 inches.—1 roll, containing 150 square feet.
Width, 22 inches.—2 rolls, containing respectively, 250, and 180 square feet.
Width, 24 inches. 11 rolls, containing respectively, 50, 55, 72, 20, 20, 30, 80, 110, 60, 110, and 200 square feet.
Width, 25 inches.—5 rolls, containing respectively, 53, 97, 100, 143, and 250 square feet.
Width, 26 inches.—13 rolls, containing respectively, 69, 215, 40, 40, 200, 210, 210, 200, 215, 216, 65, 200, and 200 square feet.
Width, 27 inches.—One to 1, containing 23 square feet.
Width, 28 inches.—11 rolls, containing respectively, 58, 93, 125, 116, 200, and 140, 200, 200, 190 and 274 square feet.
Width, 29 inches. 9 rolls, containing respectively, 110, 210, 25, 72, 90, 190, 62, 210, and 115 square feet.
Width, 32 inches.—3 rolls, containing respectively, 150, 172, 125, 41, and 152 square feet.
Width 34 inches.—4 rolls, containing respectively, 265, 270, 85 and 120 square feet.
Width 36 inches.—7 rolls, containing respectively, 80, 270, 200, 60, 150, 120, and 170 square feet.
Width, 38 inches.—5 rolls, containing respectively, 75, 316, 360, 290 and 316 square feet.
Width, 40 inches.—5 rolls, containing respectively, 300, 275, 320, 160, and 125 square feet.
Width, 42 inches.—One roll, containing 245 square feet.
Width, 48 inches.—One roll, containing 140 square feet.

A. I. ROOT, Medina, Ohio.

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CONVENTION NOTICES.

The Cortland Union Bee-Keepers' Association will hold their next meeting in Cortland, Jan. 27, 1885.
M. G. DARBY, Sec.

The annual meeting of the Maine Bee-Keepers' Association will be held at Dexter, Me., Jan. 20, 21, and 22.
F. O. ADDIXON, Pres.
WM. HOYT, Sec.

The Bee-Keepers' Association of Hamilton and Tipton Counties, Ind., will hold its next meeting at Cicero, Hamilton Co., on Friday, Feb. 6, 1885.
JNO. FRITZ, Sec. D. AMING, Pres.

The sixteenth annual convention of the North Eastern Bee-Keepers' Association will be held in the City Hall at Syracuse, N. Y., on the 21st, 22d, and 23d days of January, 1885.
L. C. ROOT, Pres.
GEO. W. HOUSE, Sec.

The Northwestern Mich. Bee-Keepers' Association will hold its third annual convention Feb. 4th, 1885, at Vassar. Place for holding meeting will be given in Feb. GLEANINGS. Send to the Secretary for railroad certificates, and secure reduced rates.
W. Z. HUTCHINSON, Sec.

THE WORLD'S BEE-KEEPERS' CONVENTION.

THIS is to be held at New Orleans, on Tuesday, Wednesday, and Thursday, Feb. 24, 25, and 26, 1885. The bee-keepers of the world are invited to attend the convention and exhibit, to be held on the above days. We have put it before you in the above shape so you will be sure not to forget it. If there is any part of the world that is not cordially invited, the managers will please correct.

ED. GLEANINGS.

BEE-KEEPERS' LOOK AT THIS!

We have a large stock of our V groove one-piece sections, and until March 1st, 1885, will sell at rock bottom.

5000 one-pound sections for an even.....\$21 00
10,000.....40 00

Sample free. Send for our Illustrated Price List of Bee-Keepers' Supplies, Free to all.

SMITH & SMITH,
KENTON, HARDIN CO., O.

2tfdb

Bee-Hives and Supplies.

We have remodeled our machinery, and can fill orders on short notice. If wanted, odd sizes made. Send orders now before the rush comes. We have a large stock on hand now. We give 3 per cent discount till Feb. 1. Price list free.

B. J. MILLER & CO.,
Nappanee, Elkhart Co., Ind.

2-12d

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column.

SOMETHING NEW.

As I have greatly increased my facilities for manufacturing

Apiary Supplies,

It will be to your advantage to send for price list before purchasing elsewhere. Cash paid for beeswax.

A. B. HOWE,
Council Bluffs, Iowa.

WANTED. To exchange Italian queens for two, or three barrels of extracted honey.
2tfdb T. S. HALL, Kirby's Creek, Jackson Co., Ala.

DADANT'S FOUNDATION FACTORY, WHOLESALE and RETAIL. See advertisement in another column. 3btfdb

BEE-KEEPERS' SUPPLIES

Wholesale and Retail.
Poplar and Basswood Sections a Specialty.

SEND 2-CENT STAMP FOR SAMPLE and PRICE.
S. D. BUELL, UNION CITY, MICH.
2tfdb

FOR SALE AT A BARGAIN.

One Pelham Foundation Mill, with Tank, Heater, Dipping-boards, and Table for mill to stand on, \$15.00. Also 18 chaff hives, \$2.50 each. Six of these are Root's Simplicity, 4 with portico, and 10 or 12 Simplicity of 1/2-inch stuff. Also one Novice Extractor, \$6.00. Six smokers, \$1.00 each.

JOHN H. DANIEL,
Cumberland, Guernsey Co., O.

WANTED.—A second-hand Barnes Foot-power Saw, for hive-making. Address
2d WM. WASON, Rockdale, Milan Co., Texas.

CARDS. 50 Chromo Cards with name, for 10 cents; 25 gold bevel-edge, or 20 hidden-name cards for 20 cents. Silver or P. O. stamps. Address
2d C. L. BROOKS,
Deansville, Onondaga Co., N. Y.

FOR SALE!

CHOICE SEED CLOVER AND POTATOES.

	By Freight or Express.		mail	
	bus' 1	peck 1	lb.	lb.
Alsike Clover.....	\$10 00	\$3 00	20c	40c
White Clover.....	10 00	3 00	20c	40c
Hall's early peachbloss potatoes.....	1 25	5 1	15c	35c
Ontario.....	1 25	5 1	15c	35c

Address

E. S. HILDERMANN,

Ashippun, Dodge Co., Wis.

Please mention this Journal if asked for the above advertisement. 2tfdb



BEE-KEEPERS' SUPPLIES, BEE-BOOKS, & LE CONTE PEAR-TREES FOR SALE.

One pear-tree sent postpaid for 40 cents.
2tfdb T. A. GUNN, Tallahoma, Tenn.

SECTIONS.

To nail, or dovetailed, 4 1/4 x 4 1/4, per 1000.....\$4 50
Other sizes, larger, to 5x6.....5 00
Send for price list and sample.

PARKER NEWTON,
EARLVILLE, MADISON CO., - N. Y.
234-

HONEY COLUMN.

CITY MARKETS.

ST. LOUIS.—*Honey*.—There is not much demand for honey at present. Southern extracted in barrels is worth from 50¢ to 60¢; choice Northern, in kegs, 70¢ to 80¢. A small retail demand for comb honey. White clover, 16¢ to 17¢ in 1-lb. sections; in 2-lb. sections, 15¢ to 16¢. Dark honey not wanted. *Beeswax*, 26¢ to 29½¢. Receipts small, and demand light.

W. T. ANDERSON & Co.,
Jan. 10, 1885. 104 N. Third St., St. Louis, Mo.

DETROIT.—*Honey*.—The honey market has improved somewhat since last month, the demand being larger. Good comb honey is quoted at 12½¢ to 15¢.
Jan. 10, 1884. A. B. WEED, Detroit, Mich.

FOR SALE.—I have one barrel of honey that I will take five cents a pound for. It is white clover, apple blossom, and honey-dew mixed. Sample sent on application.

B. B. WESLEY, La Grange, Lorain Co., O.

1885 ITALIAN QUEENS 1885

FROM MAY UNTIL OCTOBER.

Tested, \$2.00; Untested, \$1.00. Raised from Imported mothers (Root's Importation). Bees by the pound, \$1.00. 3-Frame Nuclei, good queens, \$3.50.

H. J. HANCOCK,

SILOAM SPRINGS, BENTON CO., ARK.
2tdfb

F. A. & H. O. SALISBURY'S CATALOGUE

SENT FOR A TWO-CENT STAMP.

BEE-KEEPER'S SUPPLIES AND ENGINES.
2tdf CEDDES, NEW YORK.

ALL DOVETAILED SECTIONS,

LANGSTROTH AND | BROOD AND WIDE
CHAFF HIVES, | FRAMES,
SHIPPING - CRATES, WIRE NAILS, ETC., ETC.

Send for Circular.

GEO. WHEELER, NORWICH, CHENANGO CO., N. Y.

2-3tdf

FOR SALE.

As I intend to "go West" next February, I offer for sale my house and lot, and 50 stands of bees, all good Italians. Some of my queens were from A. I. Root, and some from J. A. Green, Dayton, Ill. I have more than I can take with me.

JAMES KINGHORN,
23-4db SHEFFIELD, BUREAU CO., ILL.

FLAT - BOTTOM COMB FOUNDATION.



High side-walls, 4 to 14 square feet to the pound. Circular and samples free.

J. VAN DEUSEN & SONS,

4tdf Sole Manufacturers,
SPROUT BROOK, MONT. CO., N. Y.

VANDERVORT COMB FOUNDATION MILLS.

Send for samples and reduced price list.

2tdfb JNO. VANDERVORT, Laceyville, Pa.

DADANT'S FOUNDATION FACTORY, WHOLE-
SALE AND RETAIL. See advertisement in
another column. 3btfd

DADANT'S FOUNDATION

is asserted by hundreds of practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sag, most regular in color, evenest, and neatest, of any that is made.

It is kept for sale by Messrs. A. H. Newman, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; Dougherty & McKee, Indianapolis, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Ezra Baer, Dixon, Lee Co., Ill.; E. S. Armstrong, Jerseyville, Ill.; H. Drum, Adelphi, O.; Arthur Todd, Germantown, Philadelphia, Pa.; E. Kretschmer, Coburg, Iowa; E. F. Smith, Smyrna, N. Y.; C. T. Dale, Mortonsville, Ky.; and numerous other dealers.

Write for samples free, and price list of supplies, accompanied with 150 Complimentary and unsolicited testimonials, from as many bee-keepers, in 1883. We guarantee every inch of our foundation equal to sample in every respect.

CHAS. DADANT & SON,

3btfd Hamilton, Hancock Co., Illinois.

BE SURE

To send a postal card for our illustrated catalogue of **APIARIAN** Before purchasing **SUPPLIES** elsewhere, it contains illustrations and descriptions of every thing new and desirable in an apiary,
AT THE LOWEST PRICES.

ITALIAN QUEENS AND BEES.

J. C. SAYLES,

1-12db Hartford, Washington Co., Wis.

BEES

For Pleasure and Profit. A new book of 172 pages. Profusely illustrated, and up to the times. By Rev. W. Balantine. Price 50 and 75 cents. Address the author, NEW CONCORD, MUSK. CO., O.

Established 1855.

HEADQUARTERS BEESWAX

We have constantly on hand a large stock of Domestic, Imported, and Refined Beeswax in original shape, which we offer to manufacturers of Comb Foundation at lowest prices. Write to us for prices, stating quantity wanted. Address

R. ECKERMANN & WILL,

Beeswax Bleachers & Refiners. SYRACUSE, N. Y.
N. B.—We have low freight rates to all points on quantities. 24-11db

BEE-KEEPERS'

CIRCULARS.

SEND FOR ESTIMATES.

GEO. M. GRAY & CO., JOB PRINTERS,
MEDINA, OHIO.

Something New.

Hive with reversible section cases, also Simplicy Hives, the same as A. I. Root makes them, at Root's prices. Send for circular and price list to

1tdfb KENNEDY & LEAHY,
Box 11, Higginsville, Lafayette Co., Mo.



Vol. XIII.

JAN. 15, 1885.

No. 2

TERMS: \$1.00 PER ANNUM, IN ADVANCE;
2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00;
10 or more, 75 cts. each. Single Number,
5 cts. Additions to clubs may be made
at club rates. Above are to be sent
TO ONE POSTOFFICE.

Established in 1873.

PUBLISHED SEMI-MONTHLY BY

A. I. ROOT, MEDINA, OHIO.

Clubs to different postoffices, NOT LESS
than 90 cts. each. Sent postpaid, in the
U. S. and Canada. To all other coun-
tries of the Universal Postal Union, 16c
per year extra. To all countries NOT of
the U. P. U., 42c per year extra.

SEVERAL ITEMS FROM FRIEND POP- PLETON.

FORMING NUCLEI, MARKING HIVES, SOLAR WAX-
EXTRACTOR, ETC.

ON page 875, last issue of GLEANINGS, Mr. Doolittle gives us something which I think will prove of very great value to bee-keepers, but not for the purpose he tells of. I use and am well satisfied with the simpler method of uniting nuclei that is in common use; but I hope we shall find the method he describes, to be almost a perfect one for the formation or making of nuclei. We all know how much better results we get from nuclei which contain a proper proportion of both old and young bees, and also how very difficult it is to get many old bees to remain in nuclei formed at home. This difficulty is so great that last year I took a few colonies three or four miles from home, and from them obtained the most of my nuclei. Nuclei formed in this manner gave so much better results than when formed by the old method. I had intended to follow it this coming season, but I shall test this method given by Mr. Doolittle; and if it results in keeping the old bees with the newly formed nuclei as well as it seems reasonable to suppose it will, I for one will feel very much indebted to Mr. D. for his hints, although not put to the uses that he advised.

ATTENTION-MARKS ON HIVES.

I think it was also Mr. Doolittle who some time ago mentioned the fact that he used stones or sticks placed on different parts of a hive to indicate that some particular work needed doing at a suitable opportunity; thus, if during his regular work he finds a colony with a poor queen that ought to be superseded, he places a stone or block on some par-

ticular part of the hive, and on some other part of the hive if some other particular work needs to be done; then when he has time to attend to these things he can see at a glance just what and where any thing needs doing, without taking time to hunt up the work, or running any risk of overlooking necessary work. This is exactly similar to what I have myself used for several years, but have lately used a device much plainer, and yet very simple. It is a marker, made by nailing one piece of board across the end of another piece, being, when made, a perfect T in shape, the stem being much heavier than the top piece. I usually make the stem out of inch stuff, about 2 inches wide by 10 or 12 long, the top piece being half inch or thinner, same width as stem, and about 6 inches long. One end of the top piece is painted green or blue, the other end red. These blocks are very slightly, and can be made to indicate a large number of meanings by placing them on different parts of hives; and if necessary, by changing the position of the colors; as, red over green indicates one thing, and green over red something else. These blocks are very easily and cheaply made, as they can usually be manufactured out of waste pieces of lumber lying around the shop, and on some rainy or spare day. I have used these blocks during the past season, and find they are quite a saving of both time and steps.

CARE OF SMOKERS.

Some two or three years ago I came very near sustaining a heavy loss by fire, caused, by accidentally dropping a spark while refilling my smoker in the shop. This taught me a lesson, and since then I do not allow smokers to be taken into the shop at all, but keep them in a box near the center of the apiary, made on purpose. This box is well painted

and covered, and large enough to contain smokers, matches, shavings, and smoker fuel enough to last two or three days.

SOLAR WAX-EXTRACTORS.

Since the description of the Sun wax-extractor which I have used for years was published in 1883, page 521, I have noticed several descriptions of improvements, so called. All these improvements I have so far seen described are, I think, of more detriment to the value of the instrument than benefit. All were in reference to some method of straining the melted wax from the refuse. Any wire cloth or sieve that may be in the extractor to strain the wax through, must obstruct the sun's rays more or less, which is a positive detriment, while the object attained is of little or no value, as the wax being kept melted for a length of time allows all the refuse to settle to the bottom, when the wax can be dipped off in an almost absolutely pure condition with the flat sided tin cup, described in the original article.

I also see that some make their extractors in such a manner that the pan, or whatever is used to catch the melted wax as it drops from the wax-holder, is not left exposed to the sun's rays enough to keep the wax in it in a melted condition, thus preventing the wax from settling, or, rather, clarifying itself, which I consider one of the prime objects of the implement, second only to the actual melting of the wax.

I mentioned the fact in my original article, that the wax rendered in the Solar wax-extractor was harder than when rendered by other means, which *might* be an objection. I am informed by Mr. Thos. Tracy, of Nashua, Iowa, who runs a foundation-mill, that, instead of being an objection, he finds the wax so rendered to be tougher and better than other kinds of wax. Mr. Tracy uses a simple system of reflectors, which increases the efficiency of the implement, besides allowing us to use a single instead of double glass. He hinges the board cover, made to cover the implement when not in use, to the upper end of the sash, having first lined the inside of the cover with bright tin. This can be raised and fastened at any angle desired. Another cover, made and lined with tin like the first one, is then hinged to the side of the extractor in such a manner that it can be easily attached to either side of it, and held in a perpendicular position by hooks and staples connecting it with the first-mentioned cover. The detachable hinges for the side reflector can be very easily made by driving some staples into the edges of the sash, and some half-bent pieces of No. 9 wire into the bottom edge of the reflector. The side reflector will, of course, have to be on the west side of the implement in the forenoon, and on the east side in the afternoon, and can be laid, when not in use, tin side down, on top of the implement after shutting down the real cover.

O. O. POPPLETON, 114-236.

Williamstown, Iowa, Jan. 5, 1885.

Thanks, friend P. We can often find at the drug-stores square tin cans, used for holding castor oil and other substances. One of these laid on its side, with one end cut open, makes an excellent receptacle for a smoker, rotten wood, etc. It keeps out the rain, and no danger of fire. It can be nailed up against the fence, or a post, or anywhere in the apiary.—In regard to the Solar wax-extractor, it seems to me some of our implement-dealers might get up one for

sale. Of course, they could be made a good deal cheaper where 25 or 100 were made at one time. These reflectors to throw the sun on to the wax are quite an improvement. If tin is used, the reflectors would have to be carried in before a storm, or they would get rusted so as to spoil their efficiency. A cheap looking-glass plate would give still more heat. If the whole were put under a shed that would admit the sun, but exclude wind and rain, it might always be in working order, and would be found, I think, a profitable investment.

MICHIGAN STATE CONVENTION.

WHAT I SAW AND LEARNED.—NO. 2.

WHEN I stepped from the train, the first thing was to inquire of somebody where the convention was to be held. One might naturally suppose that we editors know every thing published in our papers; but I for one find it necessary to refer to GLEANINGS almost constantly, to know what I have written and what others have written. As the convention was to be held in the State-house, and as the Statehouse is a very prominent object in the city of Lansing, it did not take me long to get there. I was told the convention was away up in some of the upper stories, and that I had better go up in the elevator. The elevator was just starting, pretty nearly full; but I got on, and whom do you suppose I ran against first? Why, Prof. Cook himself! It always gives me pleasure to hear that people are expecting me, and are glad to see me; therefore I started out pretty well pleased. Friend Cook stopped the elevator, and we did not go away up in the attic; but by some new arrangement which I did not understand, we straightway gathered in the Senate chamber; at least that is what they called it, if I remember correctly. It was a most beautiful room, any way. By the way, how pleasant it does make any thing in the way of conventions go off, to have a nice commodious room! The room was nice, and the people were nice, and they all behaved themselves nicely. If Huber had been there I suppose he would have ejaculated very soon, "Papa, ain't it ni'y?"

The convention opened up full of interest at the outset.

REVERSIBLE FRAMES.

The facts given for and against these enlisted my closest attention at once. The question was taken up on both sides, by those who are not only old in the honey business, but who are keen and sharp as well. A great mass of evidence was given on both sides of the question, and several reasons were brought forward for using reversible frames, that I had not thought of. Very likely, reversible frames might do harm in the hands of a novice, because an unwise reversal results in about the same injury as does an unwise spreading of the brood-nest; that is, reversing the frames too early in the season, when the cluster is not strong enough to stand a breaking-up of the brood-nest, would perhaps do harm. But in the

hands of one who is old and experienced, it offers advantages that it seems to me we can not very well do without. Prof. Cook gave us a happy summing-up of the advantages and disadvantages. I did not take it all down, neither did any of the reporters, so far as I have been able to discover. Prof. Cook's strongest point was, perhaps, that by means of a reversible frame we can throw nearly all of the early white honey, clover and linden for instance, into section boxes, where it will command a price that will enable us to buy sugar two or three times over; and I was glad to hear Prof. Cook endorse the position I took so many years ago, that a pound of sugar would go further than a pound of honey, for wintering bees, and is at the same time much more wholesome. Reversible frames are destined to become largely used the coming season. A very practicable device is given in another column, and we will try to give engravings of it in our next issue.

WIDTH OF SECTIONS.

There seems to be a pretty general agreement, that where we wish to dispense with separators, the sections should be narrower than where separators are used. A width of section so that seven placed side by side will measure a foot across seems to have given good results.

SIZE OF SECTIONS.

The tendency was very strongly in favor of the one-pound sections, $4\frac{1}{2} \times 4\frac{1}{2}$, the size I decided upon years ago, so that eight would go inside of a Langstroth frame. The tendency in Michigan is quite strong, however, to abandon the idea of putting sections into frames at all. Setting them over the brood-nest in a case gives about as much honey, if properly handled, and is much less trouble; that is, those at the convention, as a rule, seemed to think so.

USING A HONEY-BOARD UNDER THE CASE OF SECTIONS.

It seems to me a little funny to think that bee-keepers are almost *en masse* now going back to the old discarded L. honey-board, with its bee-space under it. One of the principal claims in the Langstroth patent was this $\frac{1}{2}$ inch over the frames, for a bee-space; and for years we have thought it was a hindrance; but now, instead of thinking this $\frac{1}{2}$ inch to be a waste of space, two bee-spaces are given—one under the honey-board, and one above it. During the convention it was made plain to me for the first time, why people wanted this honey-board; and the reason seems to be this: The bees will build bridge-combs from the top of the brood-frames to the honey-board. We all know this, and some of us to our sorrow. Well, a great many assured me, and Prof. Cook among the number, that after having filled the first bee-space with bits of comb the bees seem satisfied, and did not put any comb and bits of wax between the top of the honey-board and the sections placed in a case right over the honey-board. In fact, a case of sections so arranged can be lifted off at any time for tiering up, sending to market, or any other purpose. Our one-armed friend, J. H. Robertson, assured me this was the

case, and that it was a great convenience with him, for it enabled him to take off the cases with one hand.

HOW TO MAKE A HONEY-BOARD.

President Hutchinson here spoke of having a honey-board made so that the spaces in it corresponded to those used in the perforated zinc, for keeping the queen and drones below. Wooden bars placed at proper distances apart would not be practicable, because the spaces could not be made sufficiently exact in this way, and the shrinkage of the boards would be constantly liable to make a variation in these spaces. Friend H. has, however, already suggested a remedy for this. In talking with Mr. R. L. Taylor, who passed the night at Prof. Cook's, with the rest of us, he informed me that he suggested the idea to friend H., who has succeeded perfectly in making a wooden honey-board with correct bee-spaces. Within a few days friend H. has sent us a honey-board by express, having bee-spaces made with a circular saw, which we furnished him, of the proper thickness. The adjoining cut gives



FIG. 1.

PERFORATED WOODEN HONEY-BOARD.

wood, the pieces being united at their ends by a cleat extending across both of them. These cleats, in order to give the proper bee-space, are exactly $\frac{1}{2}$ inch square. The boards forming the honey-board are perforated by dropping them over a gang of four circular saws properly spaced. The size is, of course, so made as to fill the top of the hive. Those we keep in stock are just right for the Simplicity or chaff hive. We can furnish them for 15 cts. each; \$1.35 for ten, or \$12.50 per 100. These prices are for the boards nailed up. In the flat they will be \$1.25 for ten, or \$11.00 per 100. A sample can be sent by mail for 12 cts. more for postage.

In working for extracted honey, I do not think I would use these honey-boards between the upper and lower stories. If you prefer to have the frames in the upper story contain nothing but honey, however, one of these honey-boards will accomplish it perfectly; and another thing, it also absolutely prevents the bees from building between the upper and lower frames; at least, the convention people intimated as much; that is, if we have a $\frac{1}{2}$ -inch space above and below the honey-board, the honey-board will likely be waxed down solid to the tops of the lower frames, but the upper frames will hang so as to be lifted out any time, without any attachments to the honey-board, any more than we have to the bottom-board of the hive.

Continued next month.

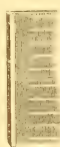


FIG. 2.

HOW DR. LOOPE SUCCEEDED IN BEE-KEEPING.

EVEN IF HE DID GO AND BUY A GREAT LOT IN THE OUTSET TO START WITH.

I AM, as you will presently see, a beginner in bee culture. I am not much given to troubling editors with my notions, so that you need not fear very frequent inflictions on your time and patience. Still, I belong to that rapidly increasing class called bee-keepers; and as you seem to wish reports, whether good or bad, I will send you mine.

I bought 50 swarms of bees in the spring of 1883, without previous knowledge or experience in the methods or devices pertaining to bee culture. However, I hired a lady who had some experience, and took counsel of others who were in the business, in the meantime subscribing for GLEANINGS, and reading Quinby and other works. I got about 2000 lbs. of comb honey, and increased to 90, as a result of that year's work. In the fall I bought 50 swarms more, and came out in the spring of 1884 with 110 colonies, 35 of which were mere nuclei, from bad wintering. The reason of such loss was, that the rats got into the cellar where my bees were; and before I found it out they were running riot among the hives, tearing off honey-boards, and gnawing the frames almost in two, to get at the honey. Of course this constant irritation produced dysentery, with consequent weakening and death. Of the 75 swarms not mere nuclei, there were not many that were strong; but the spring was quite favorable; and by June 10th I had them booming with my nuclei coming along in good shape. I depended on hired help to do most of the work, being myself busy in my profession; but I was fortunate in securing a man who could "catch on," and was steady and faithful.

The season in our locality was quite favorable, and it closed by giving me 8000 lbs. of choice white honey, basswood and clover, besides a considerable amount of unfinished sections and dark honey, probably aggregating 500 lbs., which will come very handy next spring. I increased to 183 swarms, which I am wintering in cellars. I have also bought 100 swarms this fall; and if they winter well I shall have something to do next summer, if the season is favorable.

Now, this may appear somewhat hap-hazard to you, but I assure you that I was not idle all the time, in looking up and attending to details, which are as essential in this as in other kinds of business.

So far my bees are not in debt to me; and should a sweeping loss come, it would not leave me worse than when I started. I am much indebted to GLEANINGS for many practical hints which I acted on, and to which I largely attribute my success, if it may so be termed. T. E. LOOPE, M. D.

Eureka, Wis., Jan. 6, 1885.

I am very glad indeed to get your report, doctor; but for all that, I think it a hazardous undertaking to start out in the way you did. Now I shall offer as a reason for your doing so well, that, in the first place, you are a doctor, and are presumed to be tolerably smart, with the advantage of a "physic education," as the old lady said; and on top of it all, I am sure you had two pretty favorable seasons. Wisconsin has been a little above the average during the year 1884, even

though some of the brethren do say, "Tain't so." I am glad that you had good luck in getting hired help. Do you know, doctor, that speaks well for you as well as for the help? One who finds good efficient people right around him is generally a good and efficient man himself. You say you were around attending to details considerable of the time, and the way it has turned out shows that you were. Attention to little details is oftentimes what makes the result a success or a failure.

THE PURPLE FIREWEED, OR EPILOBIUM ANGSTIFOLIUM.

ALSO CALLED WILLOW-HERB.

IN answer to our editorial in the January No., asking for seeds of the above plant, we have received a small package of the heads of the plants, with the well-known thistle-down blooms accompanying the seeds. Whether the seed will grow or not, I do not know; but we have given it a place in the greenhouse, and are watching anxiously. The letter below, from the friend who furnished the seeds, will give some light on the subject. As it is well known that fireweeds grow best where brush-heaps have been burned, our mailing-clerk asked if it would be necessary to burn down our greenhouse, in order to make the plants thrive. Our friend Lettie replies in the same strain.

Editor Gleanings:—Brother smiled a little when I bade him go forth and seek the seeds of the *Epilobium angustifolium*, but he went nevertheless, and as a result of his search I send you a little package by this mail. If it should prove to contain a few seeds that will grow, I shall be very glad; but it is my belief that dame Nature scattered all her fully ripened seeds last fall. I have no doubt the plant will take kindly to cultivation; but I should not expect it to thrive by scattering the seeds broadcast along the highways and in waste places. Hardier plants—grass and clover, and berry-bushes—easily crowd it out of the way. Of all places, it grows best in newly burned ground, so by all means "burn out the greenhouse;" for if there are any perfect seeds among these I send I should like them to have every advantage.

The common name, as given in Gray's Botany, and also in Wood's, is willow-herb. But it is often called fireweed—not unfrequently so in the bee journals, I believe. This is misleading, those not acquainted with the plant being in danger of confounding it with the true fireweed—*Erechtites hieracifolia*, a plant which blossoms later in the season, and yields honey of decidedly inferior quality.

The willow-herb and the *Gaura biennis* belong to the same order (*Onagraceae*), though not to the same genus. They are not sisters, but "cousins."

You must let me know if the seeds sent do not germinate, and another season they shall be gathered earlier. LETTIE A. WILKINS.

Mich., Jan. 7, 1885.

The two plants, although belonging to the same order, are so unlike in appearance, one would hardly be likely to call them even "cousins," if it were not for the botanics. I have never seen the willow-herb growing;

but if it bears honey any thing like the gaura, it will indeed be an acquisition. We are going to have a plat of them down on the rich creek-bottom land, if we can get the plants to growing nicely in the greenhouse. Now, if any other brothers or sisters can furnish seeds of either we shall be glad to hear from them.

REPORTS ENCOURAGING.

FROM 87 TO 127, AND 8000 LBS. OF HONEY.

I SEND you my report for 1884, this being my first season in the business. I procured 43 colonies of black bees during the summer of 1884, and 44 colonies last January, all in box hives. I lost one colony in wintering; transferred 12 in February to Simplicity hives, and had to run the rest in box hives. About 100 swarms came out. I crowded them into 36 hives. I saved every swarm that came out. I have 2 Italian and 4 hybrid colonies. I got about 3 tons of extracted honey, and one ton of comb honey in 2-lb. sections. I have it nearly all sold; got 10 cts. for extracted, and 12½ for comb honey. I have 127 colonies now. All of them have plenty of stores for winter, though a few are weak in bees. They are starved-out swarms that came to my apiary this fall. Bees commenced swarming about the 20th of March. The honey-flow commenced the 1st of May, and was over the 1st of June. We did not get any summer or fall crop, on account of the dry weather. My best hive made 240 lbs. of extracted honey. Some of my box hives made 125 lbs., about half comb. I did not have much comb foundation this season. If I could have had plenty of foundation and hives, my report would have been better. Most of the honey I got was gathered from cat-claw, and is very white and fine flavored. I don't think it can be excelled. We have some fine honey-plants here; most of them are not mentioned in any bee literature I have read.

D. M. EDWARDS, 86 127.

Uvalde, Texas, Dec. 11, 1884.

FROM 17 TO 47, AND 2500 LBS. OF HONEY.

I herewith send my report for 1884. The 26th of April I took 45 colonies from the cellar (having lost two in the cellar). About 25 were heavy, and the rest light. The prospect at that time was bright; but cold, wet, unfavorable weather then coming on, they began to dwindle; and in spite of all I could do, the middle of June found me with only 17 good colonies and 8 light ones. At that time they began to gain, although I did not get a new swarm until the 29th of July; and about that time the fun commenced. The 3d of August, three swarms came out. The 16th of August, the last (an after-swarm) issued. I then had 47 all told. From the middle of July until the middle of August I took off 5½ lbs. daily, Sundays excepted; and when a day was missed I would take off 100 lbs. next day. Not a heavy yield, perhaps, but a good even one. The honey was all choice—white and alsike clover, wild raspberry, and fireweed. I took the first premium at the North Aroostook and the Maine State Fairs on comb honey. The three swarms that came off the 3d of August I put on to wired fdn., with side boxes, and a half-story on top, containing 28 1-lb. sections. In just two weeks each swarm had filled its hive and the 44 one-pound sections. The second swarm, hived the 16th of August, filled 7 frames.

RASPBERRIES BY THE HUNDRED TONS.

The wild raspberry is a fine honey-plant, and is quite plentiful here. Last year the traders began to buy raspberries for the Boston market. At three of our villages they bought and shipped 94 tons. At the same villages this year they bought over 100 tons, and probably where one ton was picked, ten rotted on the ground.

As the result of my little apiary this year I got nearly 2500 1-lb sections filled; 600 lbs. of extracted honey, and most of my hives (the Simplicity) have now ten frames each. Had I not been very busy, I should have taken out spare combs, and extracted 500 or 600 lbs. more. When the prospect looks the brightest, we often fail of getting honey; and when it looks dark, a favorable turn of the weather will give us a good crop of surplus honey. It seems that a bee-keeper should always be prepared. This has been my experience.

E. TARR.

Castle Hill, Maine, Dec. 22, 1884.

FROM 37 TO 61, AND 800 LBS. OF HONEY.

I commenced with 37 colonies; have sold bees and queens enough, perhaps, to pay for the care of them during the summer. I now have 60 (several are nuclei); have taken about 800 lbs. of honey, 400 lbs. comb, and 400 extracted, comb is ready sale at 12½ cts. per lb.; extracted, 10 cts. per lb. I used a few of the 1-lb. section boxes as directed in A B C book, and am much pleased with the result. My bees worked in them readily. Queens never troubled the boxes. Owing to the short crop of honey the past season I got only about 100 well-filled sections, but they were very nice. The queen which I bought of you last fall did me good service during the summer, and is all right yet. You wish to know how the dies (which I bought of D. S. Given) answered for making fdn. By pressing half sheets I could make good fdn., but could not press whole ones, for want of power. The bees accept it, and draw it out readily. I am now of the opinion that it would have been cheaper to have bought foundation, all things considered.

My report is not so encouraging as some I see in GLEANINGS; but, please do not put me in Blasted Hopes yet, for I am not discouraged; I have just planted my vines for a grapevine apiary.

W. D. THARP.

Williamsburgh, N. C., Dec. 25, 1884.

PRETTY WELL DONE FOR AN A B C SCHOLAR.

As others are sending in their reports for the past season, I thought I would send in mine. My report for 1883 was very discouraging, but I was not ready for Blasted Hopes. I cherished a faint hope that I would have better success this year, and I have not been disappointed. I commenced the season with 15 colonies—9 strong and 6 weak. Fed about 75 lbs. of sugar. The spring was very wet and cold up to about the middle of May; just honey enough for brood-rearing. I increased to 30 colonies, but lost two from moths, and three by robbing, and doubled up two, leaving me 24 colonies. Found a tree in the woods; saved the bees nicely, thus making 25, all in good condition for winter. Now for the cash profits. I ran for extracted honey alone, taking 1700 lbs. of honey. Sold \$116.00 worth at from 10 to 12½ cts. per lb., and stored away between 450 and 500 lbs. for home use. I am not good authority in such matters; but I think I have done very well for an A B C scholar. I also made a regular hand on the farm, and with the

help of my boys, made 750 bushels of corn, 18 tons of fine millet hay, and 10 bales of cotton, and five tons of cotton seed. Since reading your article on page 789, Nov. No. GLEANINGS, on carp-ponds, I have thought a good deal about carp-raising in connection with bee culture; but I am somewhat doubtful as to success in this section, for there are no running streams in this portion of the country. We construct artificial ponds, or tanks, as we call them here, by levees across ravines. Such ponds fill up during the rainy season; but the trouble is, during the long droughts the ponds get very low and muddy; though common fish live and do well as long as there is any water in the pond. Perhaps some of the readers of GLEANINGS can tell us whether carp will do well in small tanks. S. F. DELLIS.

Hubbard City, Texas, Dec. 27, 1884.

MRS. HUNTER'S SUCCESS IN MICHIGAN.

In the spring of 1879 I bought my first swarm of bees. Have sold in all, since then, 2500 lbs. comb honey, at an average of 14 cts.,—\$350; 260 lbs. extracted at 10 cts., \$20. Have received for taking care of bees for neighbors, \$30; I sold 23 swarms without hives, at an average of \$5, \$100.00; have on hand 20 good swarms, with hives, racks, sections, comb fdn., etc., enough for another season, all of which I value at \$200, making a total of \$700.00.

Paid for the first swarm, and since, as needed, for hives, fixtures, sections, comb fdn., queens, extractor, winter-boxes, and help to pack them in chaff for winter, \$100, leaving a net profit of \$600.00. I have never fed sugar, but have fed honey; perhaps that accounts for the small amount sold. I have tried to prevent swarming, and have never lost a swarm by wintering or disease.

MRS. MARY HUNTER.

Vicksburg, Mich., Dec. 29, 1884.

FROM 133 TO 190, AND 12,000 LBS. OF HONEY.

We inclose the following as our report for 1884: March, 1884, 153 colonies; Nov., 190 colonies; extracted honey, 12,000 lbs. We had a very unfavorable spring, though a great amount of bloom. The weather was too cold and wet. Our honey was gathered in May and June, from horsemint bloom, and in July from the mesquite bloom. The mesquite yields fine honey, and the yield from that source this year is the best I have ever seen. In consequence of the scarcity of money, sales are slow, notwithstanding honey is now the cheapest food that can be bought here. Our honey here is always of fine quality. We use the Simplicity hive and the "tiering-up" system. Our bees are Italian, native, and hybrid. The Italians have this year shown great superiority over the native brown bees. Our only "winter trouble" here is to keep down robbing, and supply food if needed. For the latter purpose we keep combs of sealed honey. No frost yet, and bees carrying in pollen. Plenty of drones yet. In consequence of the drought (no rain since the 28th of May), our bees have gathered no honey since July. I should state, that the mesquite glories in dry weather.

W. A. MCPHAIL.

Gallinas, Texas, Nov., 1884.

FROM 70 TO 155, AND 800 LBS. OF HONEY.

Bees have done well this year, took more than 8000 lbs., nearly all extracted, from 70 colonies, spring count, and increased to 155 colonies; the honey is first quality; no basswood this year.

Mining, Ont., Dec. 19, 1884. S. H. KERFOOT.

FROM 60 TO 80, AND 4000 LBS. OF HONEY.

I am a beginner in the bee business. I began with 60 swarms last spring; that number is now increased to 80, with a surplus of 4000 lbs. of good pure honey.

GEO. HOAR.

Maple Landing, Iowa, Dec. 31, 1884.

ANOTHER "STUNNER" FROM CALIFORNIA.

We have 722 stands of bees, all in L. hives, and 46,000 lbs. of honey. My partner and myself, with the assistance of our wives, extracted in one day in July, 4500 lbs. of honey with an 8-frame extractor. My friend and neighbor, Mr. R. Wilkin, has gone east to try to sell his 50 tons of honey.

Ventura, Cal., Dec. 15, 1884.

L. E. MERCER.

REPORTS DISCOURAGING.

\$12.00 IN FOR HONEY, AND \$45.00 OUT FOR SUGAR.

BEEES did very poorly here this year. I got only \$12.00 worth of honey this whole year, and I fed \$45.00 worth of sugar—nearly 700 lbs. How is that for profit? I thought I should make something out of my bees this season, but I worked hard all summer and got nothing but bees. I increased from 38 to 82; and when I had to go to feeding I united them down to 68. I think they will go through the winter all right, if it is not too long.

MALINDA A. WILKINS.

Seneca, Kan., Dec. 23, 1884.

REPORT FROM A BOX-HIVE MAN.

I live in Belmont Co., O. Last spring I bought of you 20 or 25 dollars' worth of Simplicity hives. I got to use only one, as my bees did not swarm. I wintered 15 colonies last winter. None of my hives have movable frames. I simply have boxes in upper hive for surplus honey. My 15 colonies made about 200 lbs. of surplus last summer, and one swarm of bees. Last season was too dry for bees. I took a box of honey the other day that was probably made from tobacco-blossoms. There were four or five acres of tobacco on the place. The boys said the bees worked on the tobacco last fall lively. The honey I spoke of is very peculiar. It is not good. I sold a few boxes of good honey the other day for 12½ cents a pound. There are but few bees in this neighborhood. Honey is mostly made from white clover and poplar and linn.

ERASTUS MOORE.

Beallsville, O., Dec. 23, 1884.

THIEVES IN THE APIARY.

I think you will have to put my name in Reports Discouraging. I lost 25 colonies during the winter of 1883, commencing the season of 1884 with 11 small colonies. I increased to 27, but reduced to 21 for winter; made about 25 lbs. of beeswax, and about 2½ lbs. of comb honey. Nov. 3, in order to put the cap on the rest, some generous brother stole the very best colony (the only one that had made any section honey), cut out the honey, and left the hive and bees on the ground. My wife and I picked up the bees, and thawed them out; and as we could not find the queen, we united them with another colony. Bees are all right at date; have all in chaff hives; fed 75 lbs. of granulated sugar. I am not discouraged, but hope to do better next time. The spider plant did well. The bees worked on that when they could not get much else.

WM. COOK.

Watervliet, Mich., Jan. 5, 1885.

OVERPRODUCTION OF HONEY.

FRIEND POND GIVES US SOME THOUGHTS IN REGARD TO THE SUBJECT.

FRRIEND DOOLITTLE criticises me a little on page 700, Oct. GLEANINGS, as regards my views on overproduction. Well, I don't intend to take back any thing I have ever written in regard to the matter, and I still think the questions of overstocking or overproduction are matters which need not trouble this generation, and that the price of nice honey is no lower than years ago. True it is, as friend D. shows, the price of honey is some ten cents per lb. lower this year than it was some ten years ago; so is flour much lower in proportion than it was then, as compared with the reduced price of honey; and so goods of all kinds are lower also. When I mentioned the price of honey it was comparatively. I meant to be understood relatively also; and now when I compare the present price of honey with the necessities of life, I find the argument strongly in favor of honey.

Now, the real question of supply and demand does not govern the honey question at all. Producers of honey are not salesmen, and consequently have no real knowledge of the best ways and means of disposing of their goods. Instead of making a market for their surplus honey, and disposing of it in that market, they all rush it into some large city, and, of course, overstock that market at once. Compare for a moment the crop of honey of the last ten years with the number of people in this great country, and how much per capita will it show up? There are thousands and thousands of people who would gladly buy honey, if they could do so near their homes, who never see an ounce from one year's end to another. So I say again, this generation has no reason to worry itself about the matter of overproduction of honey, or overstocking the country with bees; and further, the crop of honey as compared with the necessities of life commands as good a price now as it did years ago; and the price obtained for it might be largely increased if the bee-keepers would market their goods themselves, and not ship it all to the same central point, and leave the disposing of it to the tender mercies of the commission houses. J. E. POND, JR.

Foxboro, Mass., Dec. 21, 1884.

EMPTY COMBS AND COMB HONEY.

SECTIONS FILLED WITH FDN., AND EMPTY FRAMES BELOW THEM, FOR NEW SWARMS.

FRRIEND W. Z. Hutchinson's article on page 803 of GLEANINGS for 1884, upon "foundation and comb honey," was read by me with great interest; for it touched upon some points of vital importance to the bee-keeping fraternity.

While in the main I consider his conclusions correct, yet I think some of them need a little explanation before the apiarists of the United States will indorse all that he says; and the object of this article will be to throw more light on the interesting subject of comb-building, and to tell why friend H. did not succeed in securing a good yield of comb honey from those swarms which were hived on empty combs. In order to have what I wish to say more fully understood, I will begin at the close of friend H.'s article, and explain it toward the beginning. Thus we have first, "When the young queens began

laying in the old colony, they shunned the frames of drone-comb, even if they were in the center of the hive." Here we have an assertion, with no reason given to support it; and so I ask, "Why was this so?" Because, when an old colony gets a young laying queen, instinct teaches them that they may expect this queen to meet all their requirements of a mother-bee for the rest of the season; while drones are necessary only when a change of mothers is contemplated by the bees. Hence no eggs are deposited in drone-comb, and no drone-comb built by such a colony, unless such comb is built for store comb where honey is coming in rapidly. Taking advantage of this fact or explanation, I manage to get one or two nice perfect worker-combs built for future use while the bees are at work vigorously in the sections, by taking one or two full combs out of the center of the brood-nest, and inserting empty frames in their places. These frames are filled, apparently, without the cost of any section honey, while it gives that energy to the colony which friend Root speaks of, as always accompanying a colony which are building natural comb. In this way a part of the combs which I use are built, which combs are given in preceding years to newly hived colonies, as will be explained further along. I also place on such colonies having young queens, all sections (if I have such) containing drone-comb, where they are filled without danger of drone-brood in them, while much drone-brood in sections often confronts the apiarist, if such sections are used over prime swarms. Before I used this plan, and previous to the advent of thin foundation for sections, I was often vexed upon finding the sections placed upon prime swarms, nearly half filled with drone-brood. In the above I have given how I get nice worker-combs built without cost, and also how to keep brood out of sections, which is done by using all sections containing drone-comb over an old colony having a young laying queen, and having only sections of worker-comb over all colonies having a queen a year or more old.

The next point I wish to notice is where friend H. says, "With me, newly hived swarms having laying queens do not build drone-comb." Here we have another assertion (without reason given telling why) which is contrary to the experience of nearly every person who ever hived a swarm of bees. Only the past season I have seen, in neighboring apiaries, hives filled nearly half full of drone-comb when laying queens went out and were hived with new swarms, and why they did not do so with friend H. was simply because his bees were managed differently, and upon a more correct principle. The colonies above alluded to were hived in a hive containing 12 Gallip frames, with no surplus arrangement put on until a week after hiving, so that it was necessary that the bees do all their work in the body of the hive. All observing apiarists know that, as the day of swarming draws near, the queen ceases her prolificness, so as to be able to fly and go with the swarm, so that, when swarming does occur, said queen is scarcely larger than a virgin queen. Nature has so ordained things for two reasons; the first of which is, that the queen can fly; and the second is, that the queen need not be damaged by an over-accumulation of eggs before there is time for the bees to construct comb in the new home for her to deposit her eggs in; thus we find that all good queens do not get fully prolific again until about a week has elapsed after the new

colony has arrived at its new location. During this week, comb has been built very rapidly, especially if honey is coming in plentifully from the fields, while the queen has not been able to keep up with the workers; the result of which is, that the bees commence to build store comb, which is always of the drone size of cells. This comb is mainly filled with honey the first season (although in some cases some drone-brood is found in them, especially if the bees feel disposed to supersede the queen or the honey-flow slacken somewhat), while the main trouble comes in having this store comb filled with drones after the bees have consumed the honey out of it the next spring. In the above I have given the "why" bees build drone-comb for the majority of bee-keepers, and now why do they not do so for H.? Simply because he put those sections filled with comb foundation on the hives at the time of hiving the swarm. This gave the bees plenty of room above for store room, so that only comb of the worker size was built below, and that only as fast as the prolificness of the queen demanded it. As her ability for laying increased, more comb was built, till at the end of the season friend H. had his hive filled with nice worker-comb and lots of section honey. Hence it all came from putting on those sections at once instead of waiting, as others do, thus securing three things, lots of section honey, no drone-comb, and a hive full of nice straight worker-comb, the latter costing almost nothing. Friend Root seems to attribute the success to the Heddon arrangement; but I think that has little if any thing to do with it, as I have used the plan successfully for years, and gave it once or twice several years ago in the bee-papers.

Well, I have already written enough for an article, and have not yet reached the main point in H.'s article I set out for; so, with the permission of the editor, I will say, concluded in next number.

G. M. DOOLITTLE.

Borodino, N. Y., Jan. 1, 1885.

By all means, friend D., give us the remainder of this interesting subject. It is just now one of the greatest importance to all concerned in the production of comb honey.

FRIEND DYKE'S BEE-FEEDER, AND SOME OTHER MATTERS.

INTRODUCING QUEENS, UNITING NUCLEI, BEE-STINGS, ETC.

AS I have not had a hearing in GLEANINGS since the great flood of Feb., 1884, I again offer a "few remarks." I notice in last GLEANINGS, that friend Heddon describes a new feeder. Now, I was very much surprised to see how much it is like a feeder I got up and used last fall for the first time, and also pleased to find that great minds run in parallel channels. The difference between my feeder and Mr. Heddon's is, first, mine is to be set inside the upper story on the frames; 2, The bees come up at one end instead of on the side; and thirdly, the feeder is covered with a loose wire-cloth top. The construction of the feeder is as follows: I first made a box 12 by 16 inches inside, 5 inches deep, with a partition one inch from one end open at bottom for passageway for bees. I used stuff $\frac{1}{2}$ inch thick. This box was thoroughly smeared with wax inside, to avoid leakage. In the partition, and opposite end, verti-

cal slots were cut, $\frac{3}{4}$ inch apart from center to center, $\frac{1}{2}$ inch wide, to slip thin boards in, similar to his feeder, which gives the bees feeding-ground, as it were. Those thin boards were $4\frac{1}{4}$ inches wide, and were prevented from going to the bottom of the feeder by a 5-16-square strip, long enough to reach across each end of feeder. The partition came within $\frac{3}{8}$ in. of top of feeder. For the cover I made a wooden rim of strips, 1 by $\frac{3}{8}$ inch, just large enough to fit over outside of feeder; upon this I tacked a wire-cloth top, so by placing it on feeder it was all closed up, except opening at bottom. Now to use this feeder I simply turned one corner of mat back far enough to make an opening corresponding with the hole in bottom of feeder. Press the mat down flat so it will stay, then set the feeder down close up to the corner of hive, so that the openings will be together. Now all you have to do is to pour in the feed right through the wire-cloth cover. It will run through without any trouble. The next time you want to fill it you can take out every bee, if you are afraid of drowning them; but I always pour the feed in, and the bees soon came up and went into the hive, not seeming to be injured by their impromptu bath. I examined a feeder which I used all last fall, and there were not half a dozen dead bees in it, and it never leaked a drop.

I do not want to appear presumptuous, but I believe I like my feeder better than Mr. Heddon's, as I fear that there would be too many chances for robbing, unless those covers were fitted nicely; and even after we are careful to have such things to fit well, the sun and rain play havoc with our calculations. The feeder which I have described holds about $1\frac{1}{2}$ gallons of syrup, which is generally enough for one colony, unless they are unusually destitute. To any one inquiring about the manufacture of this feeder, I would say that I will advertise them when I am ready to furnish them.

UNITING NUCLEI.

I read with much interest friend Doolittle's method of uniting nuclei. As your readers are doubtless aware, I raised many queens last year, and consequently had quite a number of nuclei to unite in the fall. I remember in one case I made one colony of 6 nuclei. I took the queen I wished to keep, put her in a cage, and removed all others. I then took a chaff hive and put in one frame from each nucleus, taking only such as had the most honey (there was not much brood). I then filled the remaining space with four of my best frames, after which I brushed all the remaining bees from the frames and inside of nucleus hives into the top story of hive. After smoking them down and covering with mat, they were smoked at the entrance, and a strip of wire cloth tacked over the same. This was done just at evening. They were given plenty of ventilation, and left until about four o'clock next evening, when they were liberated, after which all went well, and not a bee seemed to want to go back to its old stand. Some of my now best colonies were thus treated. I forgot to say that the queen was placed in an introducing-cage, and the bees allowed to let her out at their leisure. This brings me to another topic; namely,—

INTRODUCING QUEENS.

Some months ago friend Doolittle gave us an article on this subject, and I remember that many of his ideas were good; and especially one which was, to liberate the queen just at night, by means of a

string attached to the lid of the cage. I have been advertising an introducing-cage during the past year through GLEANINGS, which, I think, carries out this point of Mr. Doolittle's, in a special manner; and the means of accomplishing the result are under the control of the bees themselves. It has been my experience thus far, that a queen is very seldom, or never, lost if liberated during the night, if they have had sufficient time to become acquainted before being liberated. I do not undertake to explain this peculiarity; but I have noticed that, when different swarms of bees are united just at nightfall, they are much more peaceable, and less apt to fight. When we become convinced of any such disposition on the part of our pets which we can use to our advantage as well as theirs, we should be quick to avail ourselves of it, and not stand back and pooh-pooh at it as a notion.

BEE-STINGS.

Much has been said of late regarding severe bee-stings. I had a slight experience that has taught me one lesson at least, which is, to have a bee-veil handy when working with especially cross bees. I bought two colonies of bees last spring in American hives—one Italian and the other hybrid. Well, as I use the Langstroth hive exclusively, they must be transferred, as a matter of course. So one afternoon in May, during fruit-bloom, I proceeded. I left the hive on its stand, and took out the frames one by one, and carried them two or three rods to the new hive, where I shook off the bees and transferred the combs. I had gotten about half way through the first (or hybrid) swarm, when in lifting a frame from the middle of the old hive, the bees with one accord raised and covered my face, head, and arms, stinging me most severely. My wife had the smoker, and I called her to smoke them off me as I held the frame in my hands, and was wholly at their mercy. She somewhat timidly came up and helped me a little, but I had to put down the frame as soon as I got to the new hive with it, and defend myself as best I could. I finally subdued them, and finished transferring. There was but one sting in all I received (which were many) that gave me any trouble, and that was a sting on the upper lid of my left eye. It swelled somewhat that night, but did no special harm until about 10 o'clock the next forenoon, when it commenced bothering me, and I thought there was something in my eye, and tried to rub it out; but my rubbing caused it to commence inflaming to a rapid degree, and it was but a few minutes before I was obliged to quit my work and walk half a mile home, which I did under the greatest difficulty, as my eye was so inflamed that I was almost blind (my right eye has been useless since I was fifteen years of age). All I could get to help me was to lie down and apply cloths wet in cold water, changing them often. It was more than two weeks before I could do much work, as the inflammation made my eye very weak, and it was quite a while before I got rid of a kind of blur before my vision. I supposed, at first, that the sting had worked clear through the membrane of the lid, and I had a doctor to examine it, but he claimed that such was not the case, and that it would be impossible for such a thing to happen. Be that as it may, I have had my fill of that kind of stinging, and I advise people who have weak eyes, or only one, to use a veil, as you can not tell when you may get a sting that may lay you up for weeks.

Pomeroy, O., Dec. 30, 1884.

S. A. DYKE.

I would suggest, friend D., that the reason why uniting and introducing are better done at nightfall is, that all annoyance from robbers is effectually cut off until the bees can have time to settle down quietly. Through the daytime, sentinels are obliged to keep a lookout for robbers, strangers, or intruders; and at such time a strange queen or strange bees would come under the head of intruders; whereas, after bees have stopped flying, no guard needs to be kept at the entrance, and the bees, as it were, are not on the defensive, as they are during the daytime.

PURE GERMAN CARP.

A FISH 35 INCHES LONG, AND WEIGHING 14 LBS., AMERICAN RAISED.

FRIEND ROOT:—As the carp is almost the absorbing question at this time, and seeing that you and a great many others are interested in their culture, I will give you my experience.

In reading the *American Agriculturist*, of Jan., 1880, I found a description of the carp as given by Prof. Baird, U. S. Fish Commissioner at Washington, D. C., whereupon I made application, and in due time secured 20, averaging about 4 inches long, of the three varieties; viz., leather, mirror, and scale carp. This was in the fall of 1880, which will make my largest carp about five years old this spring. Now, you see I received them from the first general distribution made by the government, through Professor Baird; and if there are any pure German carp distributed by him, I have them.

My largest carp is about 35 inches long, and weighs about 14 lbs., and I have from that size down to 3 inches. This large one I speak of is a "Mirror," and has scales larger than a 25-cent piece. My pond is the first one built in this section of the country, about 70 feet wide and 140 feet long; when full, about 7 feet of water at deepest point. It is built on the south-east side of a considerable slope, lying fair to the sun, which I think very essential to both hatching and growth. I have it arranged so that all the surface water passes around the pond.

You spoke in the Dec. No. of GLEANINGS in reference to instructions on pond-building and carp culture, for sale at one dollar. I will say to all, that on receipt of a stamp I will give all instructions needful, free of charge, and I have had as much successful experience as any one in the country. There is no mistake; the culture of carp is a success. It is of all fish the most readily propagated and reared. The will become tame, and eat from the hands of their keeper. Their fecundity is great. A fish weighing 4 or 5 lbs. will lay 400,000 to 500,000 eggs, and one of 10 or 15 lbs., 1,500,000. They spawn from May to September. Their diet is largely vegetable; they are not carnivorous, and should not be in ponds with other kinds of fish. They will live in water where all other fish will perish; for instance, in pools, tanks, bog meadows or sloughs, as well as in lakes, rivers, or streams. They go down in the winter, and "kettle" in squads of from 50 to 100, and stay in a torpid state without food until warm weather approaches.

Their growth is very rapid, making from 1 to 3 lbs. in one summer. That depends on condition of water, and the amount of feed. They will eat almost any thing. I have fed raw corn, cabbage, corn

meal, cooked sweet and Irish potatoes, bread, meat, —in fact, all refuse of the table. Last summer I bought stale crackers, and fed my young carp, and found it a good investment.

All ponds want to be kept opened in winter, in order to give the fish air. My friend Mr. Walker, of this place, lost all his carp, save twelve, by his pond freezing over last winter. I am often asked, "Will they bite a hook?" I think, friend R., if you had seen me throwing them out last summer you would have thought so. It's the finest sport in the world, no mistake. It is the cheapest and best meat grown.

W. S. KALER.

Andersonville, Ind., Dec. 25, 1884.

Friend K., you have given us some very valuable facts indeed: but the most important to me just now is, how many fish do you keep in a pond of the dimensions you give? Not many, a yard long (or pretty nearly that), I should say. Where land is valuable, it is a question as to how large the ponds need to be. Yours is not very much larger than our own: but I am told that 100 five-pound fishes would overstock our pond. Perhaps abundant feeding would remedy this. Can you tell us about it? In regard to directions for constructing ponds, instead of mailing them singly to all who are interested, why not let us have the matter and have it published? I will pay you for it; and if there is not room enough in GLEANINGS, we will add some additional pages.

MY FIRST REPORT.

SOMETHING FROM A CALIFORNIA A B C SCHOLAR.

STARTED in last spring with one swarm that we had had for two years, and never got anything from. I didn't know any thing about bees, so I lost a lot of honey, I'm sure. Well, when the bees began to swarm I began to get interested. Though not knowing how important it was to have them in movable-frame hives, I put the first nine swarms in box hives, which I haven't got a thing from, except some more swarms. After this we got seven more swarms, one of which we bought, and put all these into good frame hives. From the seven last swarms (some of which came out as late as August) I got 90 lbs. of comb and 220 lbs. of extracted honey, and 3 of wax, which I think is a pretty good show for such late swarms. Now, how much would I have got from the eight early swarms and the old stand, if I had put them all in good frame hives?

There is a great deal of comb honey yet in the nine box hives, but I am waiting till I transfer them, to take it out. They are all "plum full," and some of them are very large boxes. I am waiting till fruit-bloom begins, to transfer them, and then I suppose I shall have a practical lesson on the folly of putting swarms into box hives, by the trouble they will give me. About five of the swarms we got were traveling across the country, and were attracted to our bees, and settled near them, and we caught them. Runaway swarms have to travel a long way across the country here before they find a resting-place, as there are no woods or hollow trees for them to get into, so they just have to go till they get into some crack in the roof of a house, or some one hives them. We have two such swarms in our house, where we can't get at them. They were too

sharp for us, and got into the cracks before we could hive them. Now, if my report is too long, just cut it short here and there. I am an A B C for the last 6 months only.

ALFRED W. HIND.

Anaheim, Cal.

Why, friend H., how many swarms did you get from that first one you started with, pray tell? Your letter reads as if you built up that big apiary from that one colony in the spring. You say further along, however, about five of those swarms were traveling swarms. May be that accounts for it. You do not tell us, either, how many you have now, but I should think California must be a pretty big place to keep bees.

HOW A DISABLED SOLDIER SUCCEEDS IN BEE-KEEPING.

A HOME-MADE FOOT-POWER SAW.

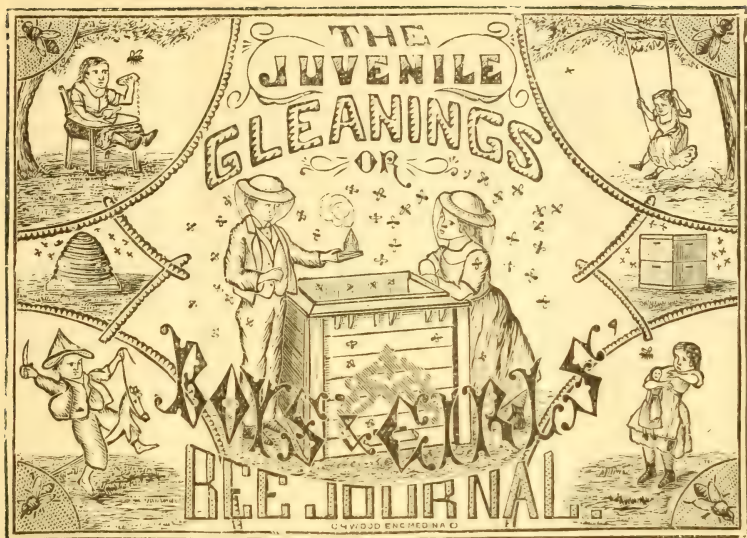
THIS has been the hardest season on bees and bee-keepers for many years. Great numbers of colonies are starving to death now, simply because their owners were too careless or too stingy to give them the food that they could not get for themselves. I had the care of about 20 colonies. Some belonged to my neighbor. I transferred the most of them during fruit-bloom, and from the 20 colonies, not a single swarm issued. I took no precautions whatever to prevent swarming, only giving room in surplus department, while about all of my neighbors who use the old box hives got from one to four swarms to the colony; but I think it my turn to smile as their little colonies are now swarming out, and starving, while my hives are full of bees and honey, and in good trim for a long winter sleep.

I was not able to buy an extractor, consequently got but little honey; a few colonies give 50 lbs. in 1-lb. sections, while others, apparently just as strong, gave no surplus at all. Now, I suppose I am making a contribution to your waste-basket; but I will have my letter so large that it will not slip through the "holes in the basket" that I was reading about in "hints" in GLEANINGS to-day.

I have finally got my foot-power saw completed. I ordered the saws, mandrel, belt, and files from your house; they all give splendid satisfaction, except the belt; it was too good, and I took it to the harness-maker and had it trimmed down about one-half, and now it is all right. I should like to tell you how I operate my machine with two blocks of wood and two straps, and get up a rate of speed that makes my neighbors almost fear to come in the shop; but you, I fear, would think I was exaggerating. I commenced early New Year's morning, full bent on making a Simplicity hive, as per instructions in the A B C, and I succeeded admirably until I came to take off the strip that goes under the cover, then I found that my 6-inch saw set close to a 2-inch pulley would cut only a little over 1½ inches deep; but in order to get my hive made, I sized the lumber to 11½ inches which worked all right, only it leaves the lid ½ inch shallower than it should be. I believe that, even with my disabled limbs, I can cut out two complete 2-story hives in a day, and that, in comparison to last season's slow work by hand, and the assurance that every hive I can possibly make is just as good as the cash, is very cheering indeed to a poor and disabled soldier, and I shall always feel indebted to you, friend Root, for the good and practical instructions I have gained from your writings.

A. B. HERMAN.

Burnettville, Ind., Jan. 3, 1885.



He that is faithful in that which is least, is faithful also in much.—LUKE 16-10.

MYSELF AND MY NEIGHBORS.

Well done, thou good and faithful servant.—
MATT. 25: 21.

I WANT to repeat a little sketch I saw in the *Sunday-School Times*. A little boy was doing something that he ought not to do. As he was only two and a half years old, he could not be expected to know very well what was proper and what was not proper. And besides, boys of that age are not always as obedient as we should expect them to be when a little older. His father stopped him by saying, "No, my son, you must not do that." It happened to be something, however, which the boy very much wanted to do, and for a while he seemed to question what the consequences would be if he did not mind. Finally his better self triumphed, and he replied, "All right papa, I won't do it any more." I presume most of us would think that was all there was to be said about it, and so the father thought; but the boy evidently had different ideas; for pretty soon he spoke out, "Pa, why didn't you tell me, 'That's a good boy?'"

Now, my friends, was not the boy right about it? When he had controlled the wrong impulse, and had triumphed over inclination, ruling his own spirit, as it were, would it not have been a wise thing for the father to have given him a little commendation? Would it not have been well, in fact, had the father watched the boy's face, that he might know the conflict going on within? What father or mother can not read their own child's thoughts, if they watch the face

and the actions? A little word of approval clinches the nail, as it were, and strengthens the child's purpose to do good instead of evil. It is not only among children and grown-up people that we notice this, but it seems as if the rule held good all through animated creation. My earliest recollections are connected with the business my father followed at the time. He used to carry the stoneware manufactured in our native town to distant towns around. For the purpose he had a large heavy wagon with a high top box, and two great stout horses; and in pleasant weather a smaller wagon with one horse followed behind, with my brother for a driver. When I became old enough I was allowed to take a trip or two; and, wasn't I proud, though, when intrusted with a whole wagonload of valuable property, and instructed in the mysteries of driving, so as to avoid rough places in the road, that my cargo might not be cracked and broken when it arrived at the destination? Well, when we came to long hard hills, father told me to let my wagon stand, and come with him and he would show me how. As the load was heavy, the horses were allowed a breathing-spell one or more times on the way up. Before we started up the hill he selected a suitable chunk of wood with which to block the wheels, which block he held in his hand as he walked along on foot. Before he started he patted the horses on their necks, and they glanced at the big hill, and seemed to take in what was to be done. When he gave the word, up they went with a will; but when the breathing became pretty hard, he would slack them up a little, and let the

wagon back against the block, until they had recovered their breath, and then on they went. Now, the point is here: After having pulled well, he always patted them, rubbed their noses, and told them they were good fellows. Sometimes they seemed so well pleased at this little praise that they would hardly wait until they were sufficiently rested, seeming anxious to get at it again, and show him how stout they were, and how well they could do. Faithful old Jake and Doll! Their tasks have been finished, and they are doubtless gone the way of all horses; but I remember vividly how much they appreciated a good word; and I know, too, how sullen and unhappy they looked when they were scolded. They did not often get scolded when at their regular business of drawing stoneware; but sometimes when they were called upon to plow the garden, or something like that, when they either did not understand or acted awkward. Did you ever know anybody who got out of patience plowing a small garden?

Now, boys and girls, men and women, is it not possible that *your* horses are hungry for a kind word or a word of praise? When your child or brother or sister has striven nobly against temptation, have you always been ready with the very important "That's a good boy"? or, "I thank you"? or whatever little praise would be fit under the circumstances? We complain when things are poorly done; but, do we make use of that other powerful lever in encouraging good resolves and good intentions—a kind and encouraging word? The baby of the household generally gets praises enough. I have sometimes thought it was almost as necessary to their growth and development as the milk they drink; and if kind words that spring from loving hearts are good for the babies and the horses, are they not good for older people? Some of you are children I am talking to. Are you always ready to say, "Thank you," "I am very much obliged indeed," and such like phrases? Sometimes actions speak louder than words, you know, and we ought to act pleased. Should we act pleased when we do not feel pleased? I want you to be honest, my little friends; but a great many times you *will* feel pleased just by trying. It is always right to do what you know you ought to do, whether you feel like it or not; and it is right to pat your old horse on the neck, and tell him he is a good fellow, even if you feel cross and contrary, and don't feel like it. Try it, and see if there is not something in your own hearts that pretty soon speaks to you, saying, "Well done, thou good and faithful servant."

Right here, friends, comes in the importance of daily thanks to God. One who thanks God for his daily bread, for the air he breathes, and for the gift of life, is a happier man than one who goes through life without giving thanks anywhere, or to anybody. And this daily thanksgiving should be followed up, even if you do not feel like it. I do not mean you should be a hypocrite; but I mean, as I said before, you should do your duty, whether your *feelings* prompt it or not; and your first and greatest

duty in this world is thanksgiving to God; and the next, thanks to your fellow-men. Of course, you need not be always saying to everybody the stereotyped words, "I thank you;" but by your actions, and these nameless little courtesies, show everybody that you feel pleasantly and kindly toward them, and carry this spirit and this feeling out among the cattle and the horses, and let it shine wherever you go. As I write these words, the feeling comes over me, "May God forgive me for having so many times in life been remiss in just this little thing. Help me, dear Savior; help me to practice that which I am trying to teach, here this bright January morning."

A LETTER FROM A BOY BEE-KEEPER.

ONE WHO IS OBLIGED TO GO ON CRUTCHES, BUT WHO SUCCEEDS PRETTY WELL NEVERTHELESS.

I WROTE you a business letter last summer; and as you published a scrap of it as news, and then in the last No. of GLEANINGS published my name on your list of correspondents, I will venture to tell you what I have done and what I hope to do. I am a crippled boy, 16 years old, and have to go on crutches, and therefore can not do so well as I think I could if I could get around better.

I bought two colonies of hybrids last spring—one in a Langstroth and the other in a chaff hive, something like the American. On the 24th of May, the Langstroth, being about to swarm, I divided them; and June 15 I divided the chaff hive. I think I made a mistake right here by losing much valuable time in brood-rearing. The way I divided was to take the queen and one frame of brood, and put in a new hive, and set it where the old hive stood, so as to get the bees that were out gathering honey. In the latter part of August the hive I divided first sent out a large swarm; and, not having any hive ready, I nailed three frames together and filled them with foundation, and hived the bees in a box about 12 inches square; and afterward I put in 4 more frames. I commenced feeding them from the time they swarmed, and kept it up as long as the weather would permit. I think they stored some honey, enough to carry them through.

In the latter part of July I received from you a select tested queen and 1 lb. of bees, which seem to have done pretty well. This makes 6 swarms, which I now have, and which I put into winter quarters in the cellar about the 1st of December. I also found a colony of blacks in a tree, which I mean to try to save. I took from the old hives about 25 lbs. of honey. I do not think we have the best country in the world for honey-producing plants. Orchards are somewhat numerous; there is but little bass-wood, and not very much white clover; there is considerable red clover, and my bees worked on it a good deal. There is also buck-berry and catnip, quite abundant. I found growing wild quite a number of Simpson honey-plants and transplanted some of them near my bee-hives. They produced considerable nectar, but I never could get a bee to even smell of them. I had an acre of buckwheat sown, which I think helped my bees. I am going to have an acre of alsike sown in the spring, and will try to get the farmers to sow white clover in their pastures, and I think we can make this a pretty good

bee country after a while. You have discovered that my bees are in a badly mixed lot of hives, and I propose to transfer them in the spring and have them all alike. Now, this is new business to me, and there are but few bee-men around here to show me much about it. I do not expect to get right into it without making some mistakes, but I am going to make it win if I can; and while I am keeping myself out of mischief, I want to make some money. I don't expect to beat pa with his short-horns, but I should like to come just as near it as possible.

Holton, Kan., Jan. 2, 1885. MARCUS BRYANT.

Marcus, I am very glad to see your zeal and courage; and if you go ahead as you seem to have started, I think there will be no trouble about your succeeding. Where there is a determination, and an earnest, go-ahead spirit, obstacles make but little difference. Of course, it is harder for you to get around; but it is better to be crippled in body than to be crippled by a lazy disposition. May be you may beat your father with his short-horns yet; who knows?—The bees failed to work on the Simpson plants, either because there was not enough of the plants, or because there were other sources of honey that were of more importance than these few plants you set out.

THE YOUNG PHILOSOPHER.

WHAT ANNA SAID, AND WHAT HER FATHER SAID.

I READ you would give a book to me if I would tell you something new and useful. I am going to try to get Ten Nights in a Bar-room. I asked papa to tell me something new. He said there was nothing new under the sun, for the Bible said so. Then I thought you would not have to give away many books. But papa said he guessed you meant things new to you. He said it would be new to you to find out I had 35 swarms of bees. But I said that would not be useful to you. He said it would, since he would buy books and goods of you, so I have told you something new and useful.

But I guess you will not think this is fair, so I will tell you about papa's "bee ring," as I call it. It is made by planting young cedars close together in such a way as to make a ring. Keep them trimmed well as they grow, and they will be very thick, so that the wind can not blow through them. Let them grow close to the ground, and little pigs can not get through them. Papa says a half-ring is better than a whole one. Take the north half, let the trees on the north grow eight feet high or more, but gradually lower them on each side till they are not more than two feet high where they end. Then it will look like a new moon, and no shade will ever fall on the hives, and it will be the warmest place that can be found out of doors in the winter, and yet quite cool enough in the summer. Of course, the bees should have shade in the summer. Papa says he likes raspberries better than grapevines for shade. On the south side of each hive, put two plants about two feet apart. Let them grow 30 inches high; keep the side limbs pinched off close to the stalks, except those between the two stalks; let those interlace till they make a thick shade.

The bees got lots of honey out of flowers, and we got a good crop of berries. Bees never bother ber-

ries as they do grapes. Every bee-man who sees papa's ring says he must have one.

ANNA ANDERSON, age 9.

Ladoga, Ind., Dec. 19, 1884.

Give my respects to your kind papa, friend Anna, and tell him that I think he has succeeded in furnishing us something both new and useful. In fact, the first paragraph of your letter is pretty sharp, both for you and your pa.—I think that cedar bee-ring would be beautiful; but the most interesting part of your letter is the raspberries for shade. They are more of a bee-plant than grapevines, and, come to think of it, I believe they would answer even better. Last fall I bought 500 strong pot-grown raspberry plants that are almost too large to go into pots now; besides, pots are too heavy for shipment. Some of the friends say they do not care for pot-grown plants. But I do. I would give more for one good strong plant growing nicely in a pot, than for half a dozen like those usually sent out. The pot-grown plant will keep right along growing, and bear a crop of fruit, at least a small one, this present year. Now, my neighbor is going to put 1000 of these strong raspberry plants in quart paper oyster-pails. The space around the plant is to be filled with nice compost, and when they get nicely to growing in the spring I am going to offer them for sale to plant around bee-hives for 5 cts. each. When any of you are ordering goods you can have one of my potted raspberry plants, oyster-pail and all, for an even 5 cts., if you want it. We shall have both the Gregg and Doolittle black-cap varieties of raspberries. Neighbor Green, who furnishes them, says they get more berries from the Doolittle black-cap than from any of the new-fangled kinds with high-sounding names.

WHAT SORT OF GLASSES DO YOU WEAR?

A WHOLESOME LESSON FOR OLD AS WELL AS YOUNG.

TWO little children, Tommie and Kitty, were amusing themselves one morning by looking through the colored glass panes on either side of the hall door of a house where I was visiting in St. Albans. The lower panes were of a bright crimson hue, the next of a deep blue, the others of yellow, green, etc. Little Kitty's small size permitted her to see through only the lower panes; and every object she looked at, trees, flowers, people, and even the ground, seemed to her eyes gloriously bright, almost as if on fire; not because they were really so, but because seen through the medium of the crimson glass. The little girl did not dream this was only a borrowed light, and she called out to her brother, "O Tommy! this yard looks the prettiest that you ever saw this morning. I do believe the trees and the flowers, and the ground too, are just going to burn up. Come, see how bright they be; they look like the fire up at Uncle Nat's, in the big fireplace."

"It is n't bright at all; it looks all blue, and just as gloomy looking as can be; and I guess it is a going to snow too," said master Tommy, who was some two years older than Kitty, and felt himself

quite too tall to stoop to the lower panes; so by dint of tiptoeing he was able to look through the second, or blue tier. The reflection of the blue glass gave to every object in view the somber tint of an approaching snowstorm, and eight-year-old Tommy wondered how his sister, looking out into the same yard, could see such brightness, while he saw only gloom.

During this conversation between the children, I sat by reading, book in hand; yet not reading, but thinking how prone we all are to judge of people and things by the sort of glass we look through, and how many kinds of glasses there are! There are the clear, transparent glasses of true faith; not only faith in God, that never stumbles at either his promises or providence, but faith in our fellow-men, hoping always and ever for the return of the prodigal, believing in his penitence, enduring patiently his stumbling, and halting and hesitating, and that buoys him up and enables the poor reprobate to overcome at last, because it will not see any good cause to be hopeless.

Opposed to these are the magnifying-glasses of presumptuous self-dependence, that paint one's own faults as virtues, see strength where there is only weakness, and mistakes conceit for wisdom. Then there are the green glasses of envy, that can never be turned toward a kindness done to another without seeing in it cause of self-grievance, and thus find faults instead of virtues in every character brought within their range of vision, because it can not bear to have another excel. There are the huge, uncomely glasses of greed, that would appropriate to self-gratification all that comes within their line of vision; and the curious parti-colored glasses of policy that convey to the organs of sight the impression of only advantages to be gained, but, strangely enough, exclude that of opportunities (especially parties unable to reciprocate favors). Then we have the pure glasses of contentment, that have the faculty of banishing clouds, and diffusing sunshine; the golden-colored glasses of cheerfulness that create light, and shed a halo of brightness around every object within their range. And there are the wretchedly clouded glasses of ill humor, that reveal naught but clouds and threatened storms, like Tommy's blue panes. But best of all are the beautiful converging glasses of Christian love, that possess the wonderful power of both absorbing and reflecting. They are first themselves warmed by an absorption of the cheering, revivifying rays of the Sun of Righteousness, and then they freely dispense these rays to all about them, causing the widow's heart to sing for joy, the very wilderness and solitary place to be glad for them, and the desert to blossom as the rose. What sort of glasses do we wear?

AUNT VIC.

Rockton, Ill.

We thank you, Aunt Vic, for this plain lesson, which I am sure we all need. I have sometimes thought that a selfish person looked through selfish glasses, for he is generally the most forward to accuse those who are working with pure motives, of being governed by selfishness; and so it is with almost all other sins, while those who are pure in heart, and working hard and honestly, do not seem to notice that the rest of the world is not doing the same thing. You see, they are pure-minded themselves, and wear pure-minded glasses. It seems to me some

of this talk you have given us will apply very well to some of the things we have in our bee-journals now and then. Now let us all take the lesson home to ourselves, without looking to see if it hits our neighbors. It fits me, Aunt Vic, and I resolved to do better before I got through reading your article.

TRUE BRAVERY.

WHO WAS IT THAT WAS COWARDLY?

A COLD sleety night several men were hurrying down the street, on their homeward way, after a day of toil. As the stormy wind swept by and blew the frozen rain in their faces, they buttoned their coats more closely, and pressed onward. But their pace slackened as they approached a brilliantly lighted building from which issued sounds of hilarity and mirth; and, as if from confirmed habit, they paused before the inviting doorway.

"Come, boys, let us take something to warm us up," spake one of the group, and "Good! good!" was echoed by all voices but *one*—a tall, vigorous young man who was about to pass on, when a companion, laying a hand on his shoulder, arrested his progress, saying,—

"What is your hurry, Tom? Join us and we will have a jolly time, if the night is blustering;" and before he could reply or expostulate he was unwillingly borne into the drinking-saloon, where well-filled glasses were speedily supplied the party, who emptied their contents, unobservant that Tom Denton's glass remained untouched on the counter. But as soon as they became aware of the fact, an ominous murmuring ran through the group. Denis Roman's voice broke the pause that followed; he was a man of a strong though mistaken sense of honor; and in his opinion, he who turned his back upon his comrades, and refused to partake of their convivialities, was a traitor, and his act high treason.

"Tom is *afraid* to drink, I see," he said in a mocking tone; "may be his wife keeps him in leading-strings; I did not know before that one of our number was a *coward*."

The hot blood mounted to Tom Denton's face; his hand was tightly clenched, and he bit his lip as if to keep back an angry reply.

"Tom is no coward," broke in another hearty voice. "Who was it that ran in front of the engine last summer, and risked his life to save a little lame boy, playing on the track? Who but Tom? I tell you, Tom is no coward."

"No, no, no!" echoed many voices, and the tide began to turn in Tom's favor.

A smile lit up Tom Denton's manly countenance, and, turning, he was about to leave the saloon in silence, when several spoke:

"Do as you please about the drink, Tom; but make us a speech before you go."

"A speech! a speech!" all cried out. Tom was an uneducated laboring man, but his heart was brave and true, and he was not one to shrink from his duty, or to decline striking a blow for the right when in his power.

"You wish to know *why* I will not drink with you," he said, in a clear loud voice. "I am proud, yes, proud, but not with the false pride that would make me feel that I was better than my fellow-men,

or cause me to withhold the right hand of friendship from my comrades; but the pride that raises me above all that is little, mean, and low. I live in a free country, and am a free man, and I *will not* be a slave to drink. I have a good wife and two little ones; we are poor, but are trying to save money to buy a home, and drink won't help me to do that. I want to merit the respect of those around me; will drink help me there? I will not have my wife pitied, and sneered at as the wife of a drunkard, and my little boys spoken of as drunkard's children. I do not want any man on his death-bed to say to me, 'I am lost; you are the cause of it; you set me the example; you gave me my first drink; I am lost through you.' There is a curse pronounced upon the drunkard. *I am afraid!* in the fear and love of God, I dare not drink."

And as he finished and stood there with folded arms, and the fire of truth in his eyes, though his garments were coarse and his hands brown with toil, he was as noble as a king, and as brave as famous warriors; one of whom the whole community should be proud.

There is a good and tender chord in the heart of every man, if we only know how to touch it; and now the saloon rang with the cry, "He is right! he is right! three cheers for Tom Denton." And he who possessed the courage to brave the sneers and ridicule of his companions, rather than yield his firm convictions of right, or countenance an evil his whole soul loathed and condemned, had probably that night sown some good seed which might spring up and bear fruit in after days. With a firm tread he left the saloon, and walked down the street to the humble happy home awaiting him, while out on the night air rang again and again the tribute to true bravery, "Three cheers for Tom Denton."

MRS. D. TACKER.

Now, little friends, whose shoes would you rather stand in—poor Tom's, as he went off home that night, or in those of the men whom he left behind him?

A GOOD HONEST REPORT FROM A BEE-KEEPER'S DAUGHTER.

WAITING UNTIL AFTER SWARMING, BEFORE PUTTING ON THE SURPLUS RECEPTACLES.

FATHER says he had no report to send in this year; but I think every bee-keeper ought to send in his report every year, whether it is a good or a bad one. So I write to tell you we are not quite ready to go into Blasted Hopes yet. The honey crop was almost an entire failure here. We got only about 1000 lbs. Sold 830 lbs., 12½ cts. per lb. There were only three others, that we know of, in all the country around, that got even a taste of honey, and some got only a few pounds. We started the spring of 1884 with 51 colonies; increased to only 69, as we worked after the plan of Prof. Cook (see June GLEANINGS, page 376, 1884). Others waited till their bees were done swarming, before they put section boxes on; and by the time they were done swarming there was nothing for them to make honey of. All the honey we got was made before the 4th of July. This fall we doubled up some of ours; fed some, and went into winter quarters with 58 colonies. LOUISA C. KENNEDY.

Farmingdale, Ill., Dec. 29, 1884.

Thank you, friend Louisa. I agree with

you, that reports should be sent in, even if not encouraging. You bring out one very important point; and since you mention it, I remember that a great many old-style bee-keepers used to say that if you put on boxes too soon the bees would not swarm, and so they waited until the bees were done swarming, and the result was often just about as you state it.

MINNIE'S TRIALS.

I WONDER if any of the other little girls who read GLEANINGS have as many trials as our Minnie. I hope not; but if you do, perhaps her experience will cheer you up. Last week we went up to school, and one of the girls met Minnie with "It's examination-to-day," and Minnie, sighing from the very soles of her shoes, said, "Is that so?" And all that day she wrote and wrote, working one example after another, eating no dinner, taking a two-minutes' walk by way of exercise, and when I went for her at four o'clock she came out and said she would not be through for an hour yet, and I left her and came home alone. Minnie wrote as long as she could see, then went home with a schoolmate, and they wrote and recited to each other till nine o'clock, and all next day it was write, write, write, till after four. That night she sang all night in her sleep, sang hymns and snatches of comic songs, all night long. Next day was Thanksgiving, and I had put the turkey to roast, and I wanted to leave it to do other work, so I went in the parlor (where Minnie had been working all the morning on an example in algebra) and asked her to sit by the kitchen stove and baste the turkey. She seemed stunned at first. "Why," said she, "I've been working all the morning on this example, giving my whole mind to it, and I can't get it; how could I do any thing with a turkey to mind?" I told her I thought she was giving too much of her mind to it, that perhaps she could get the answer sooner if she gave half of her attention to the turkey. She went with a down-in-the-mouth, dejected look, and in about half an hour she came bounding back. "I've got it, mamma; I've got it! and it was the very smallest thing that ailed it all along; I wish you had set me to basting the turkey long ago." Then she flew to the organ and played "Captain Jinks" and "Yankee Doodle," and ended with "Hail Columbia."

I was glad that her mind was relieved, for I had made up my mind, made it up as the laws of the Medes were made, that if she sang in her sleep another night, she should not go another day to that school. I don't care if it is the best school in the county, and sends out the best teachers; I won't have one of my children made crazy with these everlasting examinations. Three studies to be gone over in one day, and 160 questions in each, and every pupil must answer 75 of them or be put back in a lower class. It is murder most foul, murder of the brain. Physiologists say that 4 hours of steady brain work is as much as one can stand with impunity; but these girls wrote, and thought up what to write, a constant strain on the mind for 8 hours. I'll have no more of it. If Minnie can go along calmly and quietly, and graduate, I am perfectly willing; but any more of this sleep-talking and song-singing I won't have.

MAHALA B. CHADDOCK.

Vermont, Ill.

You are right, Mrs. C.; children should not be tasked, even during examination time, to such an extent that they get worn out, and talk in their sleep, etc. I have just interviewed Blue Eyes in regard to the matter, and she says in our schools they positively forbid their going without dinner during examination time, and that they also forbid such continued application as you mention. I think your teacher and the principal of your school ought to be interviewed. There may be two sides to the question, and it is well to be thoroughly posted before setting down one's foot, after the manner of the Medes and Persians. I should be inclined to think that Minnie was rather an exception, for the average school-girl is sometimes apt to be dilatory, and inclined to procrastinate. Now, may be even our good friend Minnie neglected her studies in the fore part of the time, thus throwing a great amount of work into a few hours' time. Minnie will forgive me for this suggestion, will she not?

SANTA BARBARA AND THE FAIR.

BY AUNT KATIE.

YOU will remember we had got to Goleta, on our trip to Santa Barbara. We stopped at a farmhouse to get some hay for our horses, and got permission to put our beds on the hay in the big barn; the hay had been baled—that is, pressed into large square bundles, of from one to two hundred pounds, and firmly tied with rope. We got our beds made on those nice smooth bundles, and then got our supper. We spent the evening in the house. The next day we went on to Santa Barbara. As we had not been there for three years we found that it had grown considerably. As we were going into the town we met a covered wagon with some "Catholic sisters" in it. They were knitting as they rode along. When one sees them the first thought is, "God bless them for their goodness!" Many and many a one has been helped by those kind women who have given themselves to such work. The ones we met were going out to a farm they have just out of town, where things are raised by them to use in the St. Vincent school for girls that is kept in the town. Oh such lovely roses, and such green grass and strange trees and shrubs! Lovely cottages, yards fenced neatly, and such a wilderness of green meets the eyes, as we passed one pretty place after another, thinking, well, that is the prettiest we have seen yet; but the next one may be would make us say, "No, I guess this is the prettiest," and so on through one street after another, all through the town. One of the loveliest was a house made of the native redwood, oiled instead of painted, making a rich red-brown color. It was two-storied, and had a handsome porch above and below on three sides of the building. The front was almost covered with a white-rose bush, and it was a mass of white roses. They gleamed out pure and white against the dark background.

In the yard was a magnificent rubber-tree, 20 feet high, and fan palms 10 and 12 feet high, with monstrous fans 3 and 4 feet across, and graceful pepper-trees were dotted about, making a pretty home

picture. We camped in a friend's yard, and then started out for the fair. It was held in the theater building and adjoining yard. The very thought of the two long wide tables filled with the delicious fruit that was in that building sets me longing to see them again, with the privilege of tasting as well as seeing. Our little three-year-old orchard was represented by a plate of large yellow bellflowers; but Lompoc, the temperance colony I have told you about, beat even Santa Barbara in the line of apples. There were apples, pears, quinces, grapes, pomegranates, figs, guavas, persimmons, oranges, lemons, citrons, limes, plums, blackberries, strawberries, raspberries, a bunch of dates, and all kinds of nuts in profusion on those tables. Don't you think we could have a grand feast out of that variety?

Then there was honey in big jars, and comb honey in glass cases, extractors, honey-knives, and last, but not least, a swarm of Holy-Land bees. They, too, were in a glass and wire case, and seemed as contented as could be.

I can not tell you of all the wonderful and useful things I saw, but I must tell you of the dear little babies that were put upon the stage to be looked at, so that the judges might see which was the prettiest and brightest. There were 17, all under two years old. I wondered, while looking at them, what each one's life would be. May be some of those boys and girls will be writing letters to GLEANINGS before long, about bees, and how they help their fathers work; and as Mr. Root tells us in the last number, may be one of them will be president some day. Who knows?

Should be a poor judge about babies, for I think them all pretty, some with one kind of prettiness, and some with another; but I said in my heart, "Please God, bless those little ones, and make them good temperance men and women."

We took our noonday lunches at the W. C. T. Union rooms, and found them doing a good work for those who have no homes wherein to sit and read or talk, or have a good social time. One morning we went up to see the "Old Mission." It is a large stone building, and was built by the Catholic fathers 100 years ago. We were not permitted to enter its walls, as only the priests live there; but we were told that we could see the church, so we went through that, and examined the pictures upon the walls. Some were of Christ, and others of the virgin Mary. They were well preserved, and the church looked very nice. The towers above, where the bells were, were being fixed up; the rest of the building was in a good state of preservation. A large fountain, with fish circulating about in the tank, took the children's eyes. It was fed from a large stream of pure spring water which waters the whole town. Those old "padres" had an eye for beauty when they picked out the site for the mission building. It stands on an eminence two miles from the sea, with a background of grand rugged mountains, and takes in the front, the full sweep of the valley wherein rests the town named for one of their loveliest saints; and though she has been dead for many years, yet her beauty seems to have been left to bless the little city, for beautiful it is with a nameless charm. I tried to see wherein the beauty lies, but could not; but there it is, and all felt the charm, and each and all assent, when asked if they think Santa Barbara beautiful. Besides the view of the valley there lies the chan-

nel and the islands beyond, and a noble sweep of ocean one gets from that point; and above all, the glorious blue ether, softened and shaded by the floating clouds. One can hardly return to the earth again after looking over that charming scene; but as we are of the earth earthy, we had to so descend and prepare for our long ride home.

Los Alamos, Cal.

LETTER FROM A BOY BEE-KEEPER.

CAN A BOY OF 14 WORK EVERY DAY ON THE FARM, AND TAKE CARE OF 19 COLONIES BESIDES?

WE have organized a bee-keepers' association in this county, styled the "Progressive Bee-keepers' Association of Western Illinois," of which I am a member. My bees are in pretty good condition at present, but some are quite weak. I was going to school last fall when the bees should have been attended to, and I could not get time to fix them up, so I just took off the honey and enameled cloth, put on the half-story, with nothing in it but air, and, as you say, gave them a good "letting alone," and they are in pretty good condition now.

We have 19 colonies at present, and my folks expect me to take care of them, and work about all the time on the farm besides. I never saw an improved hive until two years ago, and now I am a bee-keeper, expected to keep every thing in order, just because last spring I had a little "bee-fever" (on a mighty small scale). What do you think of it? Do you think it is too much for a boy of 14 years to begin on?

Bees in this part of the country did not do much last year. I never saw so much white clover in my life, but it didn't make much honey. I think it was on account of the cool nights, for it was the coolest summer I ever knew.

I like the bees, but, "my!" how I hate to get stung! I helped Mr. Norton transfer 15 swarms from box hives to Langstroth (which was the bravest thing I ever did), and I thought I should be braver after that; but one day brother Walter went out to put on some sections where I had taken off some honey, and he got stung all over, and his face swelled up. His eyes were shut, and his lips about half an inch thick, and it pretty nearly "discomfusticated" me, and it seems as if I have been more afraid than ever of the little "critters."

Macomb, Ill., Jan. 3, 1885.

J. E. STICKLE.

My young friend, I do think 19 colonies are almost too many for an average boy of 14 years of age, when he has to work on the farm every day besides. Don't you have a good many holidays, however, when you can work with your bees, if you have a mind to? I do not know of many farmers' boys who have to work on the farm every day in the year. I think your brother Walter had better have a smoker that he knows is working nicely before he starts out again. If he can get along without using the smoker at all, well and good; but it is best to have it right at hand. I always want a whip in driving a horse; but if the horse is half way decent, I expect to keep the whip in the socket during the whole trip; but I always want to see the whip in its place before I start off, no matter what horse I have got.

MINNESOTA.

Report from one of our Old Bachelor Brothers.

FROM 29 TO 66, AND 700 LBS. OF HONEY.

I WILL give a report of my last year's honey crop; although it is not very large—nothing like some of the friends in California, Texas, and Florida, who reported such large yields of honey that it almost seems as if they must have their bees taught to take a pail and dipper when they go to gather honey. I had 29 colonies, spring count, in good condition; by feeding until the dandelions came in I got them very strong. They began to swarm May 27th; but for some reason or other the white clover yielded no more honey then kept them rearing brood. About July 15th, basswood bloomed very abundantly, and then my bees took the swarming fever, and got cross; no one hardly dared go among them; and when a swarm clustered, shaking them into the swarming-box was like knocking against a yellow-jacket's nest (if you ever did that when you were mowing with a scythe, where you could not run a machine). Even tobacco smoke would not subdue them, when taking honey out of the hive. Can you give any reason for their being so cross?

I increased to 66; lost 5 by robbing, when I was making syrup, and not watching them; united 6 weak ones, so I have 55 strong swarms—34 in the cellar, and 21 in chaff hives out doors.

We are having a very severe winter. Jan 2d the mercury went down to 40 degrees below zero; and, as the Irishman said, if the thermometer had been longer, the weather would have been colder; so I don't know how they will winter. They are in chaff tenement hives, of my own make. But I am not ready for Blasted Hopes, as I got about 700 lbs. of comb honey, and raised over 900 bushels of wheat. I did not get a single pound of honey after the basswood ceased blooming; although the goldenrod was quite plentiful, there was no honey in it. Next year I will devote more time to my bees.

I wish you would send me one of those price lists that you spoke of in your last number, and said you had several girls that did not have much to do, and would jump at the chance of sending one; but if you should happen to make a mistake, and send one of the girls, instead of the price list, to any of us bachelor bee-keepers, there would be no fault found.

Did you ever try scattering a little dry dust or ashes over the snow among the bee-hives? It will cause it to melt very quickly; and when the bees fly out, if it gets warm quick, they will not get snow-blind, and tumble in the snow and die, but can alight on the honey-combed snow and rest, and then fly away.

JAMES P. SMITH.

Franconia, Minn., Jan. 5, 1885.

Friend S., the girls here in the office are not a bit better or a bit smarter than those in your own neighborhood; and I think you ought to be ashamed of yourself to think you have not found it out yourself a long while ago. We will send you the price list most cheerfully; but when you want a nice girl for a housekeeper, you must go and get acquainted with her according to the old orthodox manner. There is not any other way in the world that you can get a real good honest sensible girl.



Every boy or girl, under 15 years of age, who writes a letter for this department, CONTAINING SOME VALUABLE FACT, NOT GENERALLY KNOWN, ON BEES OR OTHER MATTERS, will receive one of DAVID COOK'S excellent three-cent Sunday-school books.

Many of these books contain the same matter that you find in Sunday-school books costing from \$1.00 to \$1.50. If you have had one or more books, give us the names that we may not send the same twice. We have now in stock six different books, as follows, viz.: Sheep Off, The Giant-Killer, The Roby Family, Rescued from Egypt, and Ten Nights in a Bar-Room. We have now in stock Our Homes, Part I., and Our Homes, Part II.

"A chief's among ye takin' notes:
An' faith, he'll prent it."

WELL, little friends, the carp-pond is frozen over, and almost as smooth as glass; in fact, it is so smooth that I can not get around on it at all. One foot goes forward when I do not want it to, and may be the other goes backward, and then they both go forward or both go backward, or perhaps sideways, and I get to feeling so uncomfortable that I think I would rather be on the ground. But you just ought to see the children fly around on the smooth and glassy surface of the pond. Even Huber fairly crowed and screamed with delight when he caught sight of the merry party of brothers and sisters, with cousin Mabel and uncle Hen as they flew around over the pond. In fact, the pond itself was a great wonderment. A few days ago he had seen the glassy water as it rippled in the breeze; but now it was hard and solid, and so clear that he could look right down and see the weeds and grass at the bottom. We drew him down on his little sled, you know; but we were all so excited, that, just as he got near the edge of the pond, the sled tipped over, and his poor little rosy face went right down on to the hard frozen ground. Mamma had pinned his mittens on, and then wrapped his arms around so he could not help himself a bit; and when I saw him going it hurt me as much, or more, than it hurt him. It was just when he first caught sight of the merry crowd, and was crowing to think he would soon be among them. I gathered him up, and kissed the tears out of his poor little eyes, and kissed the mud off from his poor little bruised pug nose. He tried manfully to keep back the tears, but they would come for a while. I asked him if we should take him home to mamma; but he whined out, amid his sobs, "E-o-you-you-." He means by this, that he does not want to go home. He got this last summer when I took him to see the strawberries, and down to see the lots. Whenever I turned around to go home he would begin a long-drawn-out sort of whimper. It is pretty hard to spell it; but

if you say "ow," and draw out the last letter long, you will get pretty near it. We laughed at him so that he got in the habit of using "ow" as a protest. Whenever he seemed tired of his play, and I asked him if he wanted to go home, or wanted to go in his "hy-by," that is, to get into his crib to go to sleep, if he wanted to play longer he would say "ow," and when he wanted to be more emphatic he would draw out the word still longer. So, even amid his pains and sobs I understood he wanted to play on the pond, and did not want to go home. So we put him on his sled and pushed him from one end of the pond to the other. Of course, everybody understood that when Huber and his sled came along they were to clear the track; and brother Ernest on his skates would back out of Huber's way with such grotesque grimaces that the baby's tears of pain had to give way to laughter pretty soon. After he had been there about half an hour I noticed a great big bunch coming up on his forehead, so large that it alarmed me, and in spite of his "ows" very long drawn out, I decided to take him home to mamma.

Well, the carp-pond has paid for itself already, even if it is true that it contains only a dozen little carp; and it seems to me some such pond should be furnished for every family of children, for a place to slide and play in winter, if for nothing else. It is a cheap amusement, comparatively; and with good companions it is innocent; and where is the doctor that would not tell us it is healthful for children to fly around as if they had wings, instead of feet, in the frosty open air? Blue Eyes fell right down flat; and as she is a pretty big girl now, it almost made the ice crack. Mamma had to come down to see the pond too, and I told her that she could not stand up on it "no way." She replied with some of the old animation I used to see in her girlhood, "Can't I, though?" And she ran right down on the pond as recklessly as a lot of young ducks would run away from the mother hen, and go into the water; and, would you believe it? she didn't slip down once, but just skimmed over the ice like a bird, here and there and everywhere; and it tickled Huber almost out of his little senses to see his mamma suddenly become a child like the other children—at least while she was on the glassy surface of that little carp-pond.

FOREST-LEAVES FOR CELLAR WINTERING.

My pa put 53 swarms in the cellar. He put leaves in the top of some of the hives.

M. A. AXTELL, age 8.

Strawberry, Iowa, Dec. 12, 1884.

MINNIE'S REPORT.

My pa has 17 stands of bees. I have a sister, her name is Alice. My pa lost only one hive. He got 300 lbs. of honey in one month from one hive.

Amity, N. Y., Dec. 10, 1884. MAMIE UTTER.

LEOMA'S LETTER.

I live with my uncle, Mr. Prior; he keeps bees; he has 20 stands. Had 4 stands in the spring; he increased to 20. He takes GLEANINGS. I like to read the little folks' letters, and I like bees too. I don't go to school in winter. I have a bird.

Hope, Ill., Dec. 23, 1884. LEOMA DAVIS, age 9.

ABOUT OUR CAT.

My brother keeps bees; he has the A B C. One year ago last summer our cat caught 3 weasels, and this summer he caught 4.

NETTIE H. CRANSTON, age 10.

Woodstock, Ohio, Nov. 21, 1884.

LUTIE'S LETTER.

MR. ROOT I HAVE ONE STAND OF BEES I HELPED PA HIVE BEES LAST SUMMER. I HAVE A CAT AND A DOG MY DOGS NAME IS ROVER. I GO TO SABBATH SCHOOL.

LUTIE YOCUM, AGE 5

RIVERTON, ILLINOIS, DEC. 31, 1884.

MOVING BEES ON A MUD-BOAT.

Pa's bees are getting along well. They are all right. He has 21 stands of bees. We moved them about a quarter of a mile on the mud-boat, and upset two of them in the snow, and had quite a time. We got them in the hive again all right. Pa put 14 stands in the cellar, and 7 outside.

Mexico, Ind., Dec. 8, 1884. SHERIDAN E. HOWER.

CHARLIE'S REPORT.

Pa had 30 hives of bees last fall. It was so cold that pa had to unite 8 hives, and feed all of them for winter. It was so dry last summer that we did not get much honey. Pa says he will have to raise 19 queens, early next spring, to take the place of old ones. His bees did not swarm last summer.

CHARLIE O. PERKINS, age 9.

El Dorado, Kan., Dec. 30, 1884.

MINNIE'S IDEAS IN REGARD TO SWARMS ALIGHTING IN THE SAME PLACE TWICE.

Papa has 10 hives of bees now; they swarmed 6 times, and they never alighted in the same tree twice. If they do that next year I think alighting on same limb twice is all bosh. I have a baby brother; he is like little Huber; he likes to play in the coal pail.

MINNIE R. ANDERSON, age 7.

Greenfield, Iowa, Dec. 30, 1884.

FIVE HIVES OF BEES FOR \$50.00.

Papa has sold five hives of bees for \$10 apiece, but we've got some more yet. Papa is going to buy some more. His bees have been housed up ever since Christmas, until day before yesterday; the weather turned warm, and they are having a fine time, and doing well.

NANNIE AUSTIN, age 6.

Austin Springs, Tenn., Dec. 31, 1884.

A LETTER FROM A THREE-YEAR-OLD "CHICK."

Papa has got lots of bees, and I's afraid of dem. I likes honey and bisits. I don't go to day school, but I go to Sunday-school; papa takes GLEANINGS, and I like to hear him read about bees. As I tan't write meself, I get Uncle George to write for me.

JENNIE A. AUSTIN, age 3.

Pretty good, Jennie; but I guessed somebody wrote your letter for you. I shouldn't wonder, however, if you told it to them, because some of your words sound very much like a three-year-old little girl.

STELLA'S AND ALTIE'S BEES.

We keep bees. Those bees we got from you are doing well. I have 5 bee-hives—one Italian and the rest are black. The moths bother our bees in the spring. We put salt around the stand. I help with the bees. I like to work with bees. STELLA COX.

We transferred 3 stands of bees last spring. We use comb foundation. I like to put in foundation. We have 90 bee-stands. This is my first letter.

Springerton, Ill., Dec. 28, 1884. ALTIE COX.

HARRY'S BEE-FEEDER.

Here is the description of a cheap and easily made bee-feeder: Take an oyster-can, cut out one side, and pound the edges down smooth, then take about six pieces of wood, just about long enough to go in the can without touching, and far enough apart for the bees to get their heads between them; then take two pieces just long enough to go in crosswise, and tack them on at each end, to hold the other pieces together. This frame will float on the syrup, so the bees will be handy to the honey, and the weak ones will not get drowned.

HARRY SCUDDER.

Greenwood, Ind., Nov. 17, 1884.

WHY THE BEES WOULDN'T STAY IN THE HIVE.

My ma has two colonies of black bees, and we got about 15 lbs. of honey in the comb. Mr. Dinnit has two colonies of Italian bees that he brought from Indiana; he got his queen from you. Please tell me what made our bees come out of the hive. We settled them three times before they would stay in the hive.

MINNIE BINGHAM, age 13.

Lamar, Mo., Dec. 30, 1884.

Well, Minnie, it is a pretty big question to answer, as to why your bees would not stay in the hive, even after having been put back two or three times. The A B C book is full of the matter, and there have been many long articles written in regard to it in the back volumes.

A LETTER FROM CANADA.

I have a swarm of Holy-Land bees. They are in the cellar. It was ten degrees below zero last night, and it is very cold to-night. We can hardly keep the cellar warm enough. My bees are in a Langstroth hive, but pa extracted from them last summer. I don't know how much honey they made, for pa extracted it with his. He is going to sow some aliske clover next spring. It makes the best and most honey, the best hay, and the highest-priced seed.

SELA W. MICHENER, age 8.

Low Banks, Can., Dec. 30, 1884.

JACOB'S LETTER "SHEARING" QUEENS' WINGS.

I like bees. I am staying with my uncle; we have 7 stands of bees now. We had 13 bees this summer. I think bees do accordingly more than men. We took corn fodder and straw to pack our bees for winter. Last year we had 13 stands, and got 28 gallons, and seven boxes of pure comb honey. I think we took 25 gallons out this year. My uncle gets GLEANINGS. I helped to catch queens, to shear one of their wings off so they wouldn't fly. We still separate our bees. We do not like to get them when they hang high up in a tree. I have no bees. I have seen black bees and the kind Italians. Italian bees are very nice looking.

JACOB A. MILLER.

LaGrange, Ind.

GEORGE'S BEE-KEEPING.

I bought one swarm of black bees in a box hive, and had a swarm of hybrids in a box hive given to me. In the summer of 1883 a swarm of bees clustered on my father's house. Papa hived them; they did not have enough to winter on, so I took them up. Then I thought I'd like to keep bees in 1884, and see if I liked the business, and now I like it well. From the black swarm I got one swarm this fall, and killed the young swarm and the mother colony, and got about 40 lbs. of honey. The hybrids gave me 2 swarms. I am uniting the 2 young swarms. I have one swarm in a Langstroth hive. I

think I shall get an extractor when I get enough money. I have sent for some sections.

GEORGE J. WILSON, age 13.

Ridgefield, Ct., Nov. 25, 1884.

Why, George, what in the world did you kill the young swarm and the mother colony for? Are you not a little bit behind the times? We do not kill queens nowadays to get the honey. It is like killing the goose that lays the golden egg.

SALT AND HONEY FOR A COLD; ALSO SOMETHING ABOUT SARAH'S LITTLE BABY-SISTER.

I am going to tell you about my little baby-sister. She is 16 months old the 10th of this month, and I think she is just as big a mischief as Huber. She is running around all the time, except when she is sick or sleeping. She makes every one of us do just as she likes. She was sick with a cold, and ma mixed some salt and honey, and gave it to her, and she soon got relief. It is very good when any one is choked up with a cold.

The bees out here did not get as much honey this year as they did last, for the season was short. I help pa with the bees in the summer. The imported queen he got from you is the best he ever had, and he says he can handle them without veil or smoker. Pa has 58 swarms this fall.

SARAH A. CHRISTIAN, age 13.

Lorraine, Ont., Canada.

BUCKWHEAT AND CARP-PONDS.

Uncle Will sowed 2½ acres of buckwheat, and had 60 bushels. I don't know much about raising carp, but I know one of our neighbors had a great deal of trouble making the dam so that the crabs would not make holes in it. If this is worth a book please send me Pilgrim's Progress.

MINERVA DUNCAN, age 10.

Black Lick, Pa., Dec. 1, 1884.

Of course, your letter is worth a book, Minerva. It was only night before last that we found a hole through the bank of our carp-pond, large enough for a kitten to crawl through, and the water was gurgling out just as fast as could be. Will went and got some good yellow clay and puddled it, and pounded it into the hole, and that stopped it. Now the question is, "What made that hole?" I should not wonder if it were those pesky crabs you tell about, for the hole was made just on a level with the water's edge in the pond, and went down through the bank into the creek that runs by the side of the pond. If there are any more such troubles we are going to draw some tin scrap down to the pond and make the horses tramp it in well along by the edge of the water.

GETTING BEES DOWN OUT OF THE TREE: MARY'S PAPA'S BEE-ARMOR OF OIL-CLOTH.

My pa has 29 swarms of bees. Our bees did not make very much honey this season. One day last July pa went to town, and the bees swarmed, and I went after my brother to come and hive them. Five swarms came out at once, and two went away, and the other three alighted in one tree. My brother climbed the tree and sawed the limbs off that had the bees on, and then took a rope and tied it around the limbs, and then let them down beside the hives. Pa has an oil-cloth shirt, to handle bees. He puts that on, and then an oil-cloth hood with

wire screen in front, so he can see. He puts his sleeves in his gloves, and ties strings around them, then the bees can't sting him. Our bees have hot feet.

MARY WING, age 12.

Lamont, Iowa, Nov. 26, 1884.

Your papa's bee-armor is quite a novel arrangement, Mary, and no doubt it would be very convenient for one who is afraid of stings; but I think I would rather not have it.

ORRIE'S LITTLE LETTER.

I live in Ghent. My aunt Viola keeps bees. She has about 50 swarms. They did pretty well. She has some in the round house, and the rest on summer stands, packed. We live by a stream called Yellow Creek. I have got a little sister Mary, and a little brother Tommy.

ORRIE PIERSON, age 8.

Ghent, Ohio, Dec. 7, 1884.

Thank you, Orrie. Your grandpa used to be one of my particular friends before he died. I am very glad to know one of his daughters has taken up bees, for I suppose your aunt is one of his daughters. I used to visit your place occasionally, down by that beautiful little stream, and I think you have a very pretty place to live.

ELLA'S LETTER JUST AS SHE WROTE IT.

Weil Unkle Am's i rote you se i letter And received my Book. I can Not Readsin it to Me. When pa was looKing throug thø Bees My Lit TIE BrotherstooD By the wilees And sald he Was Go to beaB ma N. PA Has 26 CoLinies of gees i Like to be LPPa E*traot and eat The cAPiNs: I do not Go to sØho>L moW i wolId like to go to SchoolBut It is to Fer for Me i e arn sØme at Homø. Unkle Amo's if thIs letter is WorthaBook Ple asend me SilVerKee.

ELLA KIRK.

Columbus, Kan., Dec. 6, 1884.

But you did not tell us how old you are, Ella. From the looks of the letters you make, and from the fact that you could not read your book, we think you must be pretty young.

CLARENCE'S EXPERIENCE IN HUNTING QUEENS ON HIS OWN HOOK.

I will tell you my experiment in bee culture. Last summer my mother gave me a swarm of bees. I used to help my father to hunt the queens. One day he was away, and I thought I would hunt the queen in my hive, but I could not find her. Then I opened one of pa's hives. The bees got after me in great numbers, and stung me. I "hollered," and ma came running to help me. They got after her, and she ran in the smoke-house and shut the door, and I ran in the hitchen, and they after me, stinging. Then I ran into the stable and got behind the door, and the bees went home. I have not hunted queens alone since that time.

Zearing, Iowa.

CLARENCE HASLET, age 8.

HOW ARTHUR'S FATHER MOVED THE BEES ON A LOAD OF STRAW.

We moved our bees the middle of October, about two miles. I have 2 lambs, named Smut and Dick, and I have some ducks and chickens. I did not have room for any before I lived on a farm.

I will tell you how we moved our bees. Pa took a hay-rack, and put on a good load of straw, and set the hives on, and stuffed straw between the hives.

We moved 55 swarms in two loads, in nice condition. They had a nice fly the next day, and not one bee went back to its old home. They sat in an orchard, and had their last fly the 23d of November, and pa put them in the cellar the 24th, the latest they ever flew. Our bee-cellar is under our house, and is a nice large one.

ARTHUR W. HULETT, age 12.

South Dayton, N. Y., Nov. 19, 1884.

ADA'S STORY ABOUT THE SWARM OF BEES THAT ALIGHTED ON HER MAMMA'S BACK.

My papa keeps bees. He has 139 stands. He has them all in the cellar, except 5, which are in chaff hives. I think bees are very nice little pets, if you don't handle them too roughly. Last summer mamma was trying to hive a swarm; it arose and came down, and alighted on her back. She got down from the ladder and stood over the hive while I brushed them off into the hive. I have read Ada Kreeker's letters; and as my name is Ada too, I should like to correspond with her. I should like to know her full address. ADA C. STEINEBACH, age 13.

Cedar Creek, Wis., Dec. 22, 1884.

Thank you, Ada; but you did not tell us whether your mamma got stung or not. The address we use in writing to Ada Kreeker is Tokio, Japan.

THE SPECKLED BANTAM HEN THAT HAD TWO CHICKS FOUR TIMES AS LARGE AS HERSELF.

We have four swarms of bees. I have one sister. Her name is Myrtie. We have some bantam chickens. Myrtie's are speckled, black and white. Mine are black. We put some Brahma eggs under my hen, and she hatched two, and kept them till half grown. It was comical to see her clucking around, followed closely by two chicks four times larger than herself. But a weasel got into the coop one night, and killed both the chicks, and it was pitiful to see the little mother in the morning looking sorrowfully down upon her dead chicks.

Gilford, Mich.

LILLIE GRAY.

That is a very good little story, Lillie. Poor little Bantam mother! No doubt she loved her great awkward chickens as well as if they had been diminutive like herself. Your little letter just reminds me of the Bantams I used to have when I was a boy; yes, and Brahmas too. I declare, I should enjoy being out among them this sunshiny January morning, if I had the time, and I do not know but I should love them just as much as I did when I was only a boy a dozen years old.

THE BEES THAT WENT TO THE WOODS, AND WENT INTO A KNOT-HOLE, ETC.

I will give our report for the season. We commenced last fall with one colony; it wintered all right, and so we bought another one in a box hive, but it died of starvation, because we could not look in the hive, and it was too early to transfer. He bought another one that swarmed once, but my brother had the queen's wings clipped, and they went back into the hive, but the queen was lost, and he bought another one, a dollar queen. He had it two days, when it swarmed and went to the woods. It went over half a dozen trees, and clustered on the knot of a tree. We got a ladder, and brushed some off, but they went right up again, and pretty soon we found they went into the tree, so we let them stay there. We divided the rest twice, but

had to feed them. We took 50 lbs. from the other colony. It seems hard to believe that some take from 200 to 400 lbs. per colony.

We take GLEANINGS, and we have an A B C book, and I read it so much that my folks call it my "testament." My brother bought 500 sections, 100 L. frames, 7 lbs. fdn. and a smoker. A smoker is nice to start fire with. We have all our bees in splendid condition for winter, in chaff hives, which my brother made. He has lumber enough for 30 or 40 hives. Here is an example: My age, plus $\frac{1}{2}$ of my age, plus $\frac{1}{4}$ of my age, plus 3, equals my age. What is my age?

HARVEY BAER.

Marshallville, O., Dec. 11, 1884.

Very good, Harvey. I wonder how many of the little folks can tell your age from your statement. I am inclined to think that they will need a little bit of experience in algebra to work it out; don't you think so?

ONLY 75 LBS. OF HONEY FROM 43 COLONIES OF BEES, AND HAD TO FEED BESIDES.

Pa has 43 colonies of bees. Our bees did not make much honey this year; we got only 75 lbs. of honey this year. We have put all of our bees in the cellar this winter. Some of them have not enough honey. We had to give them some of the surplus that the other bees made. One of them we are going to feed with rock candy. Our cellar is a dry warm one. Our bees wintered in it very well last winter. Pa gives me half of the price of the queens that are introduced to the neighboring bee-keepers.

TWO QUEENS HATCHED UNDER A SITTING HEN.

I hatched five nice Italians under an old sitting hen. I can run the wax and honey extractors, and foundation-mill too. Pa says this is going to be a hard winter for bees to all live through.

JOHN ROBERTS.

Schoolhill, Wis., Dec. 16, 1884.

Very good, John. It seems to me the children tell us the bad reports, even if the older ones do not. What did you put your queen-cells into when you put them under the sitting hen? Some years ago I suggested taking small round tobacco-boxes, and painting them white, so they would look a good deal like eggs. I think the old biddy would keep up the proper temperature at a comparatively small expense.

MORE ABOUT THE GERMAN CARP.

As you wished for information about carp, I have a little to offer, having seen the golden that are imported from southern China. Almost every one knows how interesting they are; but I know the German carp abound in Polish Prussia. They are there a great article of commerce, and are sent from there in "well" boats. By some they are considered the queen of rivers. They were known in England as early as 1496, and have become naturalized to their water. It is considered a good, stately, and subtle fish. They thrive best when the current is not strong, and when the ground is soft and marly. They eat scarcely any thing in the winter months, but bury themselves in the mud. They lose their shyness by visiting their ponds and feeding them on bread and boiled potatoes.

KEEPING FISH ALIVE OUT OF THE WATER FOR TWO OR THREE WEEKS.

In Holland they keep them alive two or three weeks by hanging them in nets filled with wet moss, and feeding them on bread soaked in milk. They

are prodigious breeders, and so cunning that they are styled the "river fox." The tail of the carp is bifid, and they belong to the order of the *Malacopterygia al dominalis*; "these fishes have the skeleton osseous, jaw complete, bronchia plicated, all of the rays of the fins soft, except sometimes the first ray of the dorsal, or pectoral fins; ventral fins behind the abdomen."

By the way, Mr. Root, were you thinking of carp when you put your bees, 250 in number, up for winter? You are not quite as small a bee-keeper as the one who had only 15 bees.

Nashotah, Wis.

NELLIE M. OLSEN.

Very good, Nellie. But, is it really a fact about fish living three weeks out of water? If so, I shall have to say again: "What a world of wonders this is!" We are in the habit of using the expression, "Like a fish out of water;" but now it happens that they live and eat and drink (that is what you mean is it not, Nellie?) and do not die, even when two or three weeks out of water.—I guess I shall have to own up about the 250 bees. Pretty good joke on Uncle Amos, is it not, when he smiled a little at the girl for saying that they had only 15 bees, and then afterward tells about 250 himself.

GEORGE'S FATHER.

My pa has 7 stands of bees. Three are in box hives, and four in frame. He transferred two frames last fall. He took 200 lbs. of honey, and fed them on sugar syrup. They are doing nicely now. Pa takes GLEANINGS, and we like it very much. He has the A B C book, and ma says he reads it more than he does his Bible, and that he thinks more of his bees than he does of her.

GEORGE CASE.

Cornwall, N. Y., Dec. 21, 1884.

Well, George, I do not know but I shall have to take your pa's part a little. May be just now it is necessary that he study GLEANINGS and his A B C book a good deal. I suppose that by this time he has the greater part of the Bible in his heart, so that it shines out in his daily life, even if he does not read it as much as the bee-books, and I should say it was something the same way with your mother. The subject of bees is new, and he gives it more attention now, perhaps, than these other things. Do you remember that story in the Bible, about the prodigal son? The elder brother complained because the father paid so much attention to that spendthrift boy when he got back; but the father had not for a moment forgotten the faithful and diligent son, even though appearances might have looked a little that way to an outsider.

NANNIE'S STORY ABOUT THE CARP-POND.

Uncle Amos:—May be I ought not call you that, because you do not know me; but I know you; that is, through GLEANINGS. Other boys and girls call you that, so I thought I would. Papa keeps bees, and has taken GLEANINGS ever since I can remember, and I like to read the juvenile letters.

I will tell you about our carp-pond. The man we bought the farm of, says he has known the pond for 65 years, and it has never been dry in all that time. He says the old hunters claim that they found beavers in it. We have enlarged it so that it covers about a third of an acre. The original pond is just the shape of a bowl. Papa applied to the U.

S. Fish Commissioner for the German carp; and when the fish came, the pond had about one foot of water in it. There were 25 fish from 3 to 7 inches long. For the first few days they seemed to be doing well. The pond is surrounded by forest trees, and one cold windy day a great many leaves blew into the pond, and then it froze over. After the ice thawed out, papa went down to the pond and he saw a dead fish floating on the surface of the water. He got a rake and raked all the leaves out along the shore; and before he got through he found 16 dead fish. He did not know the cause, unless it is that the body of water was so small, and the leaves seemed to make the water unfit for the fish. The pond is filling up rapidly, and papa is going to try again.

NANNIE STEHLE, age 13.

Marietta, Wash. Co., O., Dec. 21, 1884.

Thank you, Nannie. Was not the trouble because your pond was too shallow? The books say there ought to be places in the pond at least three feet deep for the fish to get into when the water is frozen. May be the leaves would make the water unfit for fish, but I hardly think so, for carp are very hardy.

SOPHIA AND HER MOTHER AND THE BEES.

My papa has 90 hives of bees, all in good condition; they are all Italians. This last summer was a poor season for bees. We got very little surplus honey. It was too cold and dry in our neighborhood. My mother and we three children tend to the bees all summer. My papa has been supervisor for the last two years, so he doesn't get time to tend to the bees. Mother can handle the bees better than father can. They don't sting her half as much. She can go in among them, and work with them bareheaded, and don't get stung; but we put our bee-caps on. They don't like us so well. We get stung very often, but we have got so used to it that we don't mind it. We have lots of work with bees in summer. They always paid us well for our trouble, except this last summer. Year before last we got about 2000 lbs. of honey, all put up in one and two pound sections. I tell you, we felt proud, as many a dollar we made out of it. We get 20 cts. a pound, or we generally give 6 lbs. for a dollar. But father says we must not get discouraged. May be next summer they will do well again, and pay us double.

Father wants to get a Holy-Land queen this next summer. I wish you would tell us if they are better than the Italians, and if you keep them for sale. My father is much obliged for the bee-books you sent him. He is a poor scholar himself. He generally gets me to read the journals, or else my mother does; but she hardly ever has time to read. I read to him some evenings; but I have my school lessons to study. Father means to send me to high school next winter.

SOPHIA P. SCHNERR, age 12.

Shrewsbury, Pa., Jan. 1, 1885.

That is a real good honest letter, my little friend, and I am very glad to know that your mother can handle the bees so well. Your report may be an encouragement for other mothers; who knows? We have the Holy-Land queens for sale, but we do not find them superior as honey-gatherers; but they have many very valuable traits, especially where one wants a good many queen-cells built, or where we want to increase colonies rapidly.

OUR HOMES.

But one thing is needful; and Mary hath chosen that good part, which shall not be taken away from her.—LUKE 10: 42.

I WANT to call your attention this morning, friends, to a simple little story. It is all told in five short verses—the last verses of the tenth chapter of Luke. There is something to me wonderfully interesting in these little sketches, because they tell me of the habits of our Savior, and they give us an insight into that wonderful character of God and man in one. It seems to me that Jesus knew this family before this little story is taken up. It was just after he had given instruction to his disciples in regard to going forth. The beginning of that chapter has that text in it about the harvest and the laborers. The seventy had gone out and returned, and he has been talking to them. It was at the same time that the lawyer stood up and asked what he should do to inherit eternal life, and then he tells them the story of the good Samaritan. Finally they come into this village. This village is Bethany, near Jerusalem. You will remember that our Lord was wont to stop there, and we have reason to feel that he had an especial friendship and love for these two sisters and their brother. Martha probably had charge of the housework. Perhaps she was older than her sister Mary. Perhaps Jesus had sent word beforehand that he would stay with them; and what woman is there who would not have felt anxious to have every thing about the household decent and in order, when that humble house is to be honored by the bodily presence of the Savior of the world?

Martha had a sister called Mary, and we are told in one brief line that Mary was much in the habit of sitting at Jesus' feet, where she sat to hear his words. Teachers in olden times taught while sitting. We read that the demoniac, after he was healed, was found sitting at Jesus' feet, clothed and in his right mind. We also learn that Paul was taught at the feet of Gamaliel. So we have something of an idea of the mode of teaching in ancient times. We can imagine the Savior with a group of followers as he had nearly if not all the time about him. Pupils we might call them. Mary, we have reason to suppose, was very earnest and very anxious. Perhaps he sat down in the doorway, or near their residence. While Mary was deeply anxious that no word that fell from his lips should escape her, she was also modest and retiring; and that she might not be in the way of others, who were equally anxious, she probably shrank down near the ground, while at the same time she crowded near to him. In that mild climate it was quite customary for hearers or pupils to sit on the ground. I am inclined to think that Mary was diligent, and ordinarily assisted her sister Martha, and did her full share of the housework. But some one told her the Master was coming, and in her zeal and love for him she forgot the housework and preparations for supper, and with the rest of the people of the village gathered

about him. Both sisters were probably human, like ourselves; but while Mary was intent on the Master's words, Martha was anxious and worried about the supper. You know how it is, dear reader, to be just on the jump to get ready in time for something or somebody, and then find your right-hand helper missing. Can we blame poor Martha for getting impatient and fretful? She had got into that frame of mind where she could take in or see nothing but the necessary housework before her, and she straightway decided in her own mind that she was doing exactly right, and Mary was sadly out of the path of duty. Luke explains it all in a few brief words in that fortieth verse: "But Martha was cumbered about much serving." Are there any words in our language that will tell it any better? So intent was she with this thought in her mind that she comes to the Savior and complains, saying, "Lord, dost thou not care that my sister hath left me to serve alone? Bid her, therefore, that she help me."

Martha was no doubt an excellent housekeeper. Whatsoever was to be done was done in her house according to the Bible maxim, "Decently and in order;" and decently and in order the work should be done as long as she was spared to manage. It was a burning shame that Mary should put off that way, just at a time she was needed above all times, with such a shocking disregard and indifference to the fact that the Savior was at their house. I presume not a doubt entered her mind but that Jesus would at once rebuke Mary for her shortcomings, and bid her attend to the important duties devolving upon her.

Let us pause a moment and see if we can remember when Jesus took the responsibility upon himself of settling little differences between brothers and sisters, or neighbors, if you choose, by deciding in favor of either one or the other party. A man once came to him, wishing him to make his brother divide the property fairly. I have often thought of that answer—"Man, who made me a divider over thee?" He whom the winds and the waters obeyed, declined assuming the responsibility of saying who was right or who was wrong in these little differences. He gave general rules, it is true, for the adjustment of all quarrels and disagreements; but he did not deem it within his province to say to anybody, "You are right and your neighbor is wrong." In this case it is true he commended Mary, and at the same time he kindly and lovingly gave Martha a few words of caution. Poor Martha, like many a good housewife, had been getting her housework and her daily cares and duties a little before the obligations due to her God. We are told, away back in the Old Testament, "Thou shalt have no other gods before me," and I presume our friend Martha never dreamed that her housework and spotless china (I was going to add silver spoons and such things as we have when distinguished guests are expected to tea, but very likely they had none of those things) were getting to be of more importance to her than her duties in regard to eternal life. But any way, she had mag-

nified the importance of these things, and had forgotten the other. I presume the Savior had told them before this to "seek ye first the kingdom of God and his righteousness, and all these things shall be added unto you." But if he did, she had forgotten it, and had forgotten, too, how nearly her sister Mary, of whom she had been complaining, was heeding that sacred injunction. He repeats her name twice, as it were, in loving rebuke: "Martha, Martha, thou art careful and troubled about many things." He goes on with the wonderful words of our text: "But one thing is needful." Perhaps he paused a little here until Martha began wondering what was that one thing we need above all others in this world. As if in answer to that query, he adds, "Mary hath chosen that good part that shall not be taken away from her."

You will notice, friends, that a part of Christ's words seem applicable to the people and subjects right before him. But every now and then we have expressions that have been handed down to us as texts that apply to the present, past, and future, and, in fact, to all time to come. One of these texts was uttered right here, and I have chosen it for a text for my remarks: "But one thing is needful." That applies to you and me as well as to Mary and Martha, and all that assembly. What is the one thing needful in this world? I do not suppose the Savior meant that other things are of no importance at all, for of course no reasonable being would understand we are to give up the housework and the business of our daily life, and spend all our time in reading the Bible, or going to meeting. I have sometimes thought that some people read the Bible too much. Of course, this is not very often the case, but there are sometimes duties that are, for the time being, more important than Bible study, and therefore, if one wants to be a good Christian, it is by taking up his duties in life, rather than reading the Bible when he ought to be doing something else. Perhaps I can make my meaning plainer if I put it something this way: There are revival meetings in our town at present, or, at least, souls are being saved in a quiet, orderly sort of way. I think Christians ought to make quite an effort to be present at these meetings. A great many say that they can not get away from home, and may be this is true. But suppose some talented lecturer should come along, and everybody were going out to hear him; under the influence of the excitement about him, perhaps you might make some sort of arrangement and go any way, and you would say the case was unusual, and of great moment. Well, our regular Christian duties are of great moment, and they should be placed first and foremost in importance. Sometimes, under the pressure of circumstances, we let supper go entirely, or pick up something that answers for the special occasion, without stopping to go through the regular routine; and I would suggest that the Master would have been better pleased had Martha listened to his teachings as Mary did; and when the time for supper came, made some hasty preparation for the occasion, taking it for granted

that it was of much greater moment to listen to the Savior's teachings than to have an elaborate meal prepared. Now, my friends, have we chosen the "good part," as Mary did, or are we "cumbered about much serving," as was Martha? Almost ever since I found that little story in the Bible, those words, "cumbered about much serving," have rung in my ears. When things go wrong, and I am wanted at several places at once, I get fidgetty, and may be a little cross and fretful, and I do not look happy, as Mary doubtless did, while she sat at the Savior's feet. In fact, right here, while I was dictating this Home Paper for your benefit, but a little time ago, the head shipping-clerk came to me with a couple of hammers in his hand. Said he, "Mr. Root, do you call those steel hammers?"

"By no means; who said they were steel?"

"Why, they have been sending them out for steel hammers, down in the counter store, for some time past."

I took both hammers, and started off with some ejaculation about such kind of work as that. On the way through the office, several clerks stopped me with some inquiries about other things. I wanted to get back to write the Home Papers, because, when the thread of my talk gets snapped off too long I some way lose the spirit, as it were. A good many things had to be righted, and I seemed to be needed in a good many places. I made up my mind that the rest of the Home Papers would have to be left until after dinner, and then we should be in the midst of the daily roar of business. All at once it occurred to me that I was just in the fix poor Martha was when she started to fetch Mary back to her work. "Cumbered with much serving" expresses it exactly. That is just what I was, right in the very midst of sitting down to teach the brethren. Would it not be a good plan to give up and not try to teach any more until I could set a better example? I am afraid if I did, that there would not be any more Home Papers. Well, what is a body to do? Why, the Master indicated plainly—straighten out the wrinkles, soften down your face, look pleasant, and pretty soon everybody will know that you are sitting at the Savior's feet like an obedient pupil, and trusting all to him. If he is "in all" (Colossians 3:11), people will believe it a great deal quicker if you show it in your face and your daily actions, than if you stand up and say so in the prayer-meeting.

Just at this present time, if I am not mistaken, there are quite a number among the readers of GLEANINGS who are "cumbered with much serving," besides myself; and in my efforts to help these friends, after having read the letters they have written me, I have felt most vividly that we all of us need to remember more that one thing needful. Quite a number of the brethren have invested more largely in business than they ought to have done. During the fore part of last season there seemed a prospect of a great demand for many things, that did not hold out as we expected; and after the honey season was over, we found ourselves with unsold property on our hands, and debts to meet. Some of us have had "too

many irons in the fire," to use a common expression. We, by our anxiety to accumulate wealth and business, cumber ourselves, and we have been working and worrying until we have hardly time for the weekly prayer-meetings, for the Sunday-school lesson-helps, for Bible-reading, and the study of God's word. We have been following Martha's plan, and we have not been happy.

Years ago a little brother stood by my side. He was as bright and as pretty and as funny as Huber; and with the rest of the children I taught him to walk, and laughed at the efforts of his baby-tongue to frame words and sentences. I personally taught him his A B C's, and led his little infant mind through the First Reader. He did not take naturally to study; and when he was tired I used to take long walks with him in the fields. Sometimes I took him to the neighboring grist-mill, and let him see the "wheels go round." Happy days those were; and since that brother has grown up and gone into business, I often think of him. He was always industrious and hard working, patient and faithful, and yet I fear his life is not as happy as it was when he was a lisping child, knowing nothing of the cares of this world. One reason why he has had so much care and worry is, because he has tried too many kinds of business. By the time he has become expert and efficient in one line, he has taken some other, and has had to learn a new trade as it were. Of course, there has been reason for this, and good reason. When his health failed from indoor work, he turned to farming; but I think he commenced on too large a farm. Boys, how many of us are doing that same thing? Instead of being content with a little of this world's goods, and that little in such good order, and so well cared for, that it does not cumber us, and make slaves of us, we cripple ourselves by taking upon us too much care and too much worry. I need this little verse, may be, more than any of you, and I am going to try to profit by it.

There has been quite a protest of late against crowding children at school, especially while they are young. Our boys and girls often have more studies than they can manage easily. They become burdened and cumbered, and very often, I fear, the one thing needful is crowded out or passed by for the time being. Now, it is not only the children, but it is men and women in early life, that are cumbered, cramped, and crippled by cares too heavy for them, and burdens too great. A few days ago I had a talk with a young man who has commenced lately in business. He is bright, active, ingenious, honest, and true. Besides all this, his physical health is good, and he is in love with his chosen avocation. I used to look upon him as a model, almost, of a nice business young man. I felt sure he would win his way in the world, and it seemed to me as though he had the mental and physical ability to rise in the world easily. It used to be worth a good deal to me to see him laugh over his work, especially when he met obstacles. He was always cool and quiet and collected; but for all that, he enjoyed a suc-

cess and a victory over obstacles as much as anybody. Well, business sort o' fell in his way as it were; in fact, it tumbled into his hands, as business always tumbles into or on to those who are capable, brave, and true. I saw, or thought I saw, with dismay that he was going to have more than he could well manage. It was business of such a sort, too, that there was no margin to pay for efficient helpers. He came to me for a little advice on some matters connected with his business. I told him how I felt about it. Finally, said I, "Do you enjoy your work? are you as happy in carrying it on as you used to be when you had only a little, and that little was always nicely done, and easily under your complete control?"

"No, I do not enjoy it one bit," was his reply.

He is a Christian, and fully understands all these things I have been telling you; but I fear he is getting to be "cumbered with much serving," like so many of the rest of us; and if he is not released from some part of the weight that rests on his young shoulders, I fear he may be crippled for life. I do not mean by this that his health will break down, but I am afraid his natural fund of courage and energy, and also his rare skill and ingenuity, will be drowned in drudgery and toil too great for one of his age. I do not fear that he will lose his hold on Christ, but I am afraid his life will not be as happy and joyous and as useful in the work of the Master as it might otherwise be.

I want to enlarge right here on a point that has been a long time on my mind, dear friends. It is this matter of taking upon ourselves, or loading upon our children, more than they are ready for or can bear. You know how often I have recommended that beginners in bee culture should take a few hives—one or two; and when they become perfectly able to take charge of more without being cumbered, then let them do it. It is true in any kind of business; and I do not know but it is true in all animated nature. Peter Henderson says, if a plant gets feeble, and looks as if it were going to die, do not put on guano or liquid manure; do not even water it; let it alone. When the soil is so dry that the plant looks rather dried up, it will very likely start to put out a leaf. Now, if you make haste to give it a dose it will surely die. Give it a very little water, and watch the effect. When you find that a little water causes it to thrive, increase the quantity a little, and do this so carefully that you will, after a little, discover how much it will bear. When you begin giving it fertilizers, work in the same way. First satisfy yourself what it will bear, then feed it just so much as does it good—no more. In due time you can turn on the water by the barrelful, give it wheelbarrow loads of strong manure, pour on your liquid fertilizers without stint, for it has become now a great tree, and can manage strong food. The plant thrives, and looks happy. You are happy too, because you have learned to understand it. The same is true of sick people or sick animals. Wait until you know that what you are giving does good be-

fore you give it too heavy loads or heavy doses.

Can a man be a Christian, and yet be unable to meet his honest dues? Why, yes, of course he can, for Christians are often beset with unseen reverses; but I tell you, my friends, a Christian can work for the master tenfold more effectively if he can be free from these kinds of encumbrances, and he ought to be very careful that he does not get into any places that will cripple him and cumber him, and weigh him down in the way debt does. Now do you see my application? When you go into business, have a little business, and have that little nicely attended to. Have your shop and your tools all decent and in order. Be so much abreast of your work that it will not suffer if you take an hour or a day to sit at the Master's feet, or to do errands for him when he bids you. When you can manage easily without being cumbered, and feeling that your work is drudgery, then, if you choose, undertake a little more, or enlarge somewhat.

But I do think, dear friends, it is a most excellent thing to have some hard cash ahead. Mr. Terry has written an excellent article in the *Ohio Farmer* recently, on this very subject. He said that he once had an accident that came near taking his life. He was too badly hurt to speak, or give any sign to let them know that he knew what was going on around. But even at such a time it gave him a thrill of pleasure, and he thinks helped toward his recovery, to remember that there was money enough in the bank to meet all his obligations, and pay all expenses attending a spell of sickness. Mr. Terry is a farmer. He makes farming pay; but after reading his articles for some time past, I have come to the conclusion that one great secret of it is, that he is never cumbered with much serving. He has not only time to do every thing that needs to be done, and to do it well, but he has a little spare cash always on hand to meet any contingency, or to take advantage of any rare chance that comes along. I do not know that Mr. Terry is a Christian, but I do know and feel that he sets a good example for Christians.

A few days ago it all at once occurred to me that this young brother of whom I have been speaking was in danger of going through life without enjoying the things that God has placed here in this world to make us happy. He is a farmer, and has a large beautiful farm, if I am correct; but with the amount of business he always has on hand, and which he is unable to attend to without expensive hired help, I am afraid that life to him will, on the whole, be a sort of weary slavery of business, instead of being glad and joyous, as God intended it should be. A few days ago he told me if his last venture did not succeed any better, he was going on to his farm with his boys, and that he would not have a bit of hired help around him. What they could not do should be left undone, and they would take things easy. It seemed to me like a bit of bright sunshine coming out through the clouds, and I decided I would take a part of the advice myself.

Now, why is it that we voluntarily cumber ourselves with so many cares? I have thought of this matter a great deal. As a general thing, I believe we cumber ourselves because we hope to make much money by some new investment or industry, or we hope to make money easier than we have been doing. Some of us get tired of the monotony of every-day life. We want something new—some sort of excitement as it were. The Root family are especially subject to such feelings, I believe. If they do not have some sort of excitement going on, they imagine they are sick—at least that is my disposition a good deal.

And this brings us to our text again—what do we desire most in life? and is the thing we desire most, the one thing needful? When Christ is first and foremost, and when we get up a healthy excitement in regard to living pure lives, then we are all right. Now, suppose we should get carried away with the idea of doing justly, loving mercy, and walking humbly before God, what harm would it do? Or suppose we should get up such an enthusiasm that we could hardly wait for daylight to come, and, in a determination to stop expenses, make the best of every thing we already possess, owing no man ought but love and kindness, and things of this sort, would anybody be afraid that we should carry it to too great an extreme? I am fond of excitement; fond of new hobbies; but if I do not look out it runs into a fondness for buying new and expensive machinery, new and high-priced seeds, strawberries, raspberries, poultry, etc. Well, during the past few months I have been very happy in a new idea of taking good care of the property *already* in my hands, and a blessing has come with it. It seems to me it is a good deal like my brother's decision to go on to his farm, without a bit of hired help, thus stopping outgoes, do the best he could, working alone with the children God has given him, and accepting such reward as God chooses to give, and *make* expenses come inside of this reward. Does not this come pretty nearly in line with our text? One who does this can look to the Savior, and sit at his feet with a clear conscience, and the happy, peaceful sense of wronging no man. When some money is put away for sickness and a rainy day, and the lesson has been well learned, of making expenses keep inside the income, then let us wisely and carefully consider new seeds, new stock, new machinery, etc. In carrying this out, perhaps we may go through the world poorer in dollars and cents than by taking risks and incurring debt, (I can not for a minute think it possible, however, in a general way; can you?) but shall we not be richer in that good part which shall not be taken away?

Now, friends, how shall it be? Will this next venture that stands right before you cause you to be "cumbered with much serving," spoil your happiness and peace of mind, or will it lead to a low seat at the Master's feet, with kindness and good will toward men? Is Christ the Savior first, foremost, and all in all to you? or are you so far from him that the cares of the

world stand between you and cumber you? Are you serving him with a joyous service, or are you a slave to this world's cares, cumbered and bowed down? If the latter, in his name I bid you drop it all. Come, and let us take a low seat near to his feet, and learn of him, for we have the promise, "Seek ye first the kingdom of God and his righteousness, and all else" (these things that cumber and worry us included) "shall be added unto you."

RECENT DEVELOPMENTS.

And Suggestions and Queries Particularly Pertaining to the Season.

FEEDING AFTER NOVEMBER, ETC.

JAN. 1, 1884, I began giving my whole time to the bee business. They did well the first two years, some making 100 lbs. of surplus, which I sold at 20 cts. at home; but this year was a "stunner;" white clover did well for us, but it has not got well set in our country yet. After that there was very little. Blooms were very plentiful, but had no nectar. I made 35 chaff hives on my Barnes saw. I bought bees and filled 20, and with my 10 old and 6 new ones made 26; they were all in good shape for our fall bloom, which is the crop here. In 1883, the 12th of Aug. was the first surplus I got. The flow lasted till Sept. 15th; but this fall I was feeding, instead of taking off surplus. Owing to sickness I was delayed feeding till November. I was bothered a good deal in not having a larger feeder than your five-cent one. My bees had only 5 to 10 lbs. when I began, so I fed 10 lbs. of syrup, of granulated sugar, half as much water as sugar; then I saw Jas. Heddon's article on syrup, only 3 lbs. of water to 10 of sugar, and a little tartaric acid. This made a syrup so thick that on cool nights it would be taken down very slowly. I tried making 50 lbs. into candy in brood-frames, as A B C tells of, and much prefer it to syrup so late as this. It was hard to get chaff to put in upper story, so I went to the corn-sheller and got the silk that is cleaned from the shelled corn. What do you think of it?

Hopkins, Mo.

JOHN C. STEWART.

The silk from corn answers nicely in place of chaff, friend S.; but you wait to look out for mice. They think it is nice too. I think I should prefer candy so late in the season.

DRONES IN THE WINTER.

To-day, Dec. 23, I have a colony of bees with nice drones. I should like to know the reason. They have a nice queen. I got her from you last October. They have had drones since June, and have had them ever since the rest killed their drones last July. This one has quite a lot. CHAS. SAYLER.

Marchand, Ohio, Dec. 28, 1884.

As a rule, drones in winter indicate the queen to be a drone-layer or a partial drone-layer, although this is not always the case. Sometimes a very strong colony will keep drones right through winter, without our being able to observe that the queen is in any way lacking when she commences laying largely in the spring. If sealed drone-brood is now found in the hives, I should be inclined to call the queen a drone-layer.

CALIFORNIA HONEY AT 12½ CTS. PER LB.

The following came to hand after our regular market report had been printed:

CHICAGO.—*Honey.*—The demand is very light. Prices are weak, and a gradual decline of prices will follow this date, in the effort to work off the crop. Many of the producers are yet in possession of their last crop. California honey can be bought here at 12½c per pound in comb.

Chicago, Ill., Jan. 12, 1885.

R. A. BURNETT.

MOVING BEES WITH HOUSEHOLD GOODS.

I moved 12 colonies of bees in a car with household goods; car was 8 days on the road. Bees were shut up 12 days in Langstroth hives, with wire screen on top. Result, about one quart of dead bees in every hive; about a dozen broken combs, queens safe, and colony in fair condition for wintering.

Bolivar, Denton Co., Texas. GUSTAV RAUCH.

FROM 3 TO 16, AND A PLEASED "PASSENGER."

Being very well pleased with your "craft" and its crew on the voyage last year, I have concluded to renew my ticket, and keep company with you through the present year. Find the "ducat" inclosed. I lost more than half my bees last winter, with dysentery, and the remainder were weak. I did not get an ounce of honey last season, running alone for colonies, ending the season with 16 from 3. I have them packed in paper, on a plan of my own, which I may describe to you, should it prove a success. If not, the less said the better. They went through the late cold snap finely, and yesterday were out strong, making good use of the present warm spell.

C. GARWOOD.

Baltimore, Md., Jan. 1, 1885.

MY REPORT FOR 1884.

Last spring my bees were in pretty fair condition, being strong in bees, honey, and brood, when the yield of honey commenced, all except 4 that were weak, and did not make any honey, only enough to keep them, and for winter. From the 53, I secured of surplus honey, 320 lbs.; 1900 lbs. in one-pound sections; 800 lbs. was all I got finished from clover and basswood; the rest was finished with Spanish needle and smartweed honey, which looks very nice in one-pound boxes. I had 1400 lbs. of extracted honey, mostly fall honey. My increase was by dividing and building up, and rearing queens. Nearly all were in pretty fair condition for winter.

SHOVELING SNOW OVER THE HIVES.

There was a pretty good snow last Tuesday, and I shoveled snow over all the hives, thinking it would be cold weather for a month or so; but I was disappointed, for the weather is warmer, and has been raining for almost a week, and to-night 'tis just pouring down. The snow is all melted, and the ground is all covered with water and mud.

Lima, Ills., Dec. 20, 1884. J. A. THORNTON, 51-73.

Friend T., I do not believe I would shovel snow over the hives, neither would I shovel the snow off, as some of the friends have done. This is an old question, and I believe the general decision was, not to do any thing with the snow at all. If you could fix up some sort of a windbreak, to make the snow drift up over the hives, so as to be soft and light, just as it falls, it would be an excellent protection; but shoveling snow is apt to disturb the bees, and may do them harm. In fact, examples have been given, showing pretty clearly that unreasonable disturbance sometimes results in dysentery.

FEEDING BEES.

LAYING CANDIED HONEY DIRECTLY ON TOP OF THE FRAMES.

LAST winter I fed honey in the cellar, that was candied hard; it was good clover honey. I broke it in chunks of about one or two pounds, and laid it on top of the frames. They took and put it in the cells, and sealed some, and some of the bees built comb on top of the frames, but the honey needs to be candied so solid that it will be almost like candy made of sugar.

WORKER-BEES FROM A FERTILE WORKER.

Did you ever hear of a fertile worker producing worker-brood? Well, I had a stand that I divided about the time the honey-flow ceased. I took the old queen away and gave them a cell which they cut out, and then started cells of their own in due time (almost 7 days). I shook off all the bees, and destroyed all the cells. I went over them again in two days, and took out every thing that was capped higher than a worker-bee, all drones, and gave them two cells which they destroyed in a few hours. I then thought I would give them a caged queen in a day or two; but in a day or so, when I looked into the hive I found a few eggs, and in a few days they had four combs filled irregularly with eggs, and some would have as many as a dozen in, and others a less number. Well, I hunted three days, and found nothing that laid eggs. I shook them out in some smartweed, away from the hive, and let them go back when they got ready. I have sometimes got rid of fertile workers in that way, but it did no good. I tried queen-cells again, but they cut them out, so such work went on for two weeks, when they had five combs of brood—sealed drones in worker-cells. I carried the hive to another one, and shook the bees in and put in three combs of the brood and two combs of it with another swarm. I then closed up for that day, as robbers were flying around. The next day I went out with my knife, and clipped the drone-heads off in a hurry from all the combs, and was not very particular in missing a few. In two or three days I went again to make another examination of the combs, and shave off the remaining few little drones. I got through at one hive, and went to the other. I began to shave again, when I pulled out some young worker-bees that had got their wings, and were perfect. I almost finished, but found three in cells that I had not yet reached with my knife. I went to the first combs and found two more among the wonderful lot of drones. You will perhaps doubt. Well, the above is correct and true; and if I could see you I could tell it better than I can write.

Cascade, Iowa, Dec., 1881.

MONT. WYRICK.

Friend W., your plan of feeding candied honey has been mentioned before; but the difficulty seems to be to get honey that will candy hard enough. In regard to the worker-bees from fertile-worker brood, it seems you must have made a mistake, and got hold of the wrong combs somewhere; but, of course, you know better than we do whether or not this were possible. Young queens often lay drone-brood for quite a spell, or until they have filled several combs, and change to worker brood. Is it not possible that a queen got into your hive and laid those eggs, or a portion of them, that you thought were laid by fertile workers?

HUMBUGS AND SWINDLES

PERTAINING TO BEE CULTURE.

THE BOHEMIAN OATS; AN OLD AND EXPLODED SWINDLE.

MR. A. I. ROOT:—I don't like to draw your attention from your business, but I will tell you why I write to you. There are two men in this county, hailing from the northern part of this State, who claim to represent the "Bohemian Hulless-Oats Association." I tell them that their scheme is a fraud. They refer me to several northern counties where the "association" has "operated," and say the farmers are well satisfied with the "operation." One of the counties is Medina, and perhaps you know something about the scheme. Several of our best farmers are buying oats of them, paying \$10.00 per bushel, expecting big profits back. I am a farmer, and a beginner in bee-keeping. I love to work with bees, but I don't want any oats at \$10.00 per bushel. I am well pleased with GLEANINGS.

Very respectfully yours,— T. L. REES.

Winchester, Adams Co., Ohio, Jan. 7, 1885.

Friend R., the Bohemian hulless oats is one of the biggest swindles that ever cursed Medina County, and the same may be said of the whole of this part of Ohio. In our vicinity the whole thing is now an old and exploded humbug. If you want further particulars, see the articles on this subject in the *Ohio Farmer* of late. You or anybody else can buy as many genuine Bohemian hulless oats as you want, for about 75 cts. per bushel. If your best farmers are, at this late day, going into that miserable, foolish fraud, they are behind the times. Some men have made money out of it, no doubt; but in so doing they have robbed their neighbors, or innocent men who will have to bear the loss eventually, for the loss must come sooner or later. Honest, hard-working people who will sell their influence and reputation for the sake of the little money they get in their pockets by the operation, ought to be ashamed of themselves. Surely, no Christian man would keep money in his pocket thus obtained, after he had seen the way in which innocent parties are made to suffer.

BEES IN INDIA.

A MISSIONARY'S ACCOUNT.

IRESIDED seven years in India as a missionary. My home part of the time was in the Himalaya Mountains, about 1100 miles northwest from Calcutta, east from Hurdwar. I hope to start for that country about Dec. 1, and make a permanent home there. I expect to introduce a number of industries among the native Christians; and as there are plenty of honey-bees in the rocks and trees, and they even come into the native houses and store their honey, I hope to get the busy bees to do some mission work. I never saw a bee-hive there, or a pound of honey, except what the natives cut from the trees. Bees are plentiful, and bee-food in abundance, and the season lasts from eight to ten months. The altitude will be 3000 to 5000 ft. above the level of the sea, and the latitude about 30 or 32°.

The bees could not be placed in the open air there because black bears are plentiful, and the human thieves too numerous. I do not know what kind of bees are there as I never observed them.

Evanston, Ill., Oct. 16, 1884.

I. L. HAUSER.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,

EDITOR AND PUBLISHER.

MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clipping Rates, See First Page of Reading Matter.

MEDINA, JAN. 15, 1885.

And nothing shall by any means hurt you.—LUKE 10: 19.

HOLTY-TOITY! What do you think? We have got some of the seeds of the *Epilobium angustifolium* already up in the greenhouse. The plants are very small—microscopic almost, but we've got 'em. Aren't you glad?

DISCOUNTS BEFORE FEBRUARY 1.

ON sections, foundation, and foundation-mills, we still allow a discount of 10 per cent. We also sell 10,000 Simplicity sections for \$40.00 as heretofore. We continue these offers, as we have a large stock of the above goods in stock, and are anxious to supply as many as we can before the great rush comes. We will also allow a discount of one per cent on orders of every description, received before Feb. 1.

OUR TEN-CENT POULTRY-BOOK.

By buying in large quantities, I have been enabled to get a very pretty little poultry-book of 48 pages and 19 illustrations, that we can sell at the very low price of 10 cts. The book is well written, and covers nearly all that is important to success, and does not puff any patent medicine. One cent extra for postage, if wanted by mail. In the above book I am especially pleased with some of the cheap designs for poultry-houses, such as almost any boy can make in the corner of the dooryard. The book is usually sold for 25 cents.

INK BY MAIL AT 15 CTS. PER PINT.

MAY be you all say that can not be, because the P. M. G. will not allow it. But you see we are ahead of you. Friend Oldroyd has contrived some ink-powders that will make just as good ink as he ever made in the world, simply by dissolving the powders in water. Each package, dissolved in a pint of pure rain water, makes a pint of good ink, and the price is 15 cts. If wanted by mail, add 2 cts. per package. We have in stock, packages for black, blue, violet, green, or red. Eight packages will be sold for \$1.00, or 60 packages for \$5.00. If it ever gets too thick, it can be reduced any time with water. They will not injure by freezing, and do not corrode the pen.

SOMETHING ABOUT OUR ONE-PIECE SECTION MACHINE.

We have made such improvements that we think we have the best machine in the market. On our old machines the collars that the saws were fasten-

ed to were held in place by set-screws; but we found they sometimes slipped, and thus made bad sections; and more than all that, constant tightening would spring the shaft; so we made a shaft with a thread running the entire length, also a thread in collar, and a nut to follow collar, and now we have no trouble to set saws or cutters, and have them stay. We have also made improvements in the feed motion, doing away with the screw, or worm, to reduce the motion, and reduce it by means of counter-shafts and pulleys. Our crank-shaft is now horizontal, having a crank at each end, thus giving a more steady motion to the table. We have also added a planed iron plate that is placed under the cutters, so when once set as wanted it will always be true. We can furnish machines to make V or square grooves, at \$90.00. This is \$15.00 more than our old machine, as per former price lists.

WHEN DOCTORS DISAGREE, WHO SHALL DECIDE?

In our December number, page 859, Gen. Leggett declared that Forncrook had not then taken an appeal. Mr. F. sent us a statement from his lawyer, declaring the appeal to have been taken, and that the clause in Forncrook's price list was fully authorized. I am sure I do not know who is right in the matter—perhaps both are right—Forncrook meaning that steps had been taken to take an appeal, and I think Gen. Leggett was certainly correct in saying that Mr. F. had not taken an appeal. Mr. J. A. Osborne, who had charge of the case, writes that on the 6th of Jan., Forncrook filed a bond with the clerk of the Circuit Court, for the purpose of taking an appeal, and I am to-day, Jan. 6th, officially notified that such an appeal has now been taken. I do not know that it makes any very great difference when the matter is commenced, more than that, if any statements have appeared in GLEANINGS not strictly true, it was because we were wrongly informed; and whenever we are satisfied that we have been wrongly informed, we are always ready to retract.

OUR NEW MACHINE FOR MAKING THE FOUR-PIECE DOVETAILED SECTIONS.

WE shall probably soon have an engraving of this machine, to answer the many inquiries in regard to it. It may be described briefly thus: Imagine a ten-inch circular saw properly hung on a mandrel, directly before your face. Well, now, right under the saw imagine a wooden wheel covered with sandpaper. Suppose both saw and wheel to be running at the proper speed. In front of the sandpapered wheel is a table. On this table you lay your piece of planed plank, dovetailed, of course, on each end. Now, if you lay a piece of plank on this table, and push it up against the sandpapered wheel, of course the face end of the plank will be sandpapered. Well, the table on which the plank rests is attached to a frame like the frame of an old-fashioned up-and-down water saw-mill. By means of a crank and pitman, this gate has a slow motion up and down, carrying the table with it. Now, this sandpapered wheel stands a little further back than the buzz-saw—just enough back of it so that when the plank is carried up after being sandpapered, the buzz-saw slices off a piece just thick enough for a section blank. After this blank is sawed off, the table falls until the blank stands once more in front of the sandpapered wheel. Just as soon as it comes in the right position, the operator crowds the plank forward, sandpapers the end as before, and the

buzz-saw slices off another blank, and so on. The machine is quite simple, and does its work perfectly. We can fill orders on short notice, for \$30.00 for a complete machine. This machine will make about 8000 or 10,000 sections per day; and as it dispenses with the cigar-box planer (the sandpaper wheel taking its place), it is the cheapest rig, perhaps, for making sections, all the machinery needed being an ordinary buzz-saw table and set of groovers. Of course, you will need a planer to plane the plank, unless you have it done at some planing-mill.

OUR TEN-CENT INDUSTRIAL LIBRARY.

A BOOK on horses. We have just made arrangements whereby Kendall's treatise on horses can be furnished for only 10 cts. We have sold hundreds of the books for 25 cts., as many of the friends will remember. This, with the poultry-book mentioned elsewhere, makes two toward our ten-cent industrial books. We expect to buy these books by the thousand, and therefore we ought to have a pretty fair little treatise on matters in special rural industries for the above amount of money. If wanted by mail, add two cents extra for postage.

FILING GROOVING-SAWS.

In my remarks in regard to the matter last month I omitted to state that these should be properly adjusted on the mandrel, with the necessary washers and papers to make the dovetailing as tight as you want it; and after being so screwed up, the saws should be filed right on the mandrel. Under no circumstances think of filing them separately. If you once get the adjustment changed, it is next to impossible to get them in place again. Always file gangs of saws right on the mandrel. Our cant files on the different counters are right for the purpose.

AN APOLOGY FOR AN UNINTENTIONAL BLUNDER.

I AM ashamed to say it, but quite a number of cast-iron hammers have been sent out where steel ones were ordered, and should have been sent. They are worth 15 cts. each, while the steel ones are worth 35 cts.; and therefore if any of the friends who have received them can make use of them so as to allow us 15 cts., we will give them credit for 20 cts. on account, if they will notify us of the fact. If that won't make it pleasant, tell us what to do, and we will try to do it. The fault was with the manufacturer who shipped us the hammers; but as he failed in business soon after they were sent (is it any wonder?) it seems I have nobody to fall back on. When the matter was submitted to me I remonstrated because the clerks did not know by their looks what the hammers were. They said they knew they did not look just right, but supposed they must be, because they came out of the right box. We found three dozen of these hammers mixed in among a gross of steel ones.

ADVERTISING YOUR BUSINESS.

MAY be you think by the above that we are fishing for advertisements for our journal. Well, just see now how much you are mistaken. What I had in mind was some little sign-boards to tack up on the gate-post, or on the barn, or may be on a tree. In fact, you can put them in all these places if you wish, and you won't be much out of pocket then, for they cost only 10 cts. each, and yet they are $4\frac{1}{2}$ inches wide and 18 inches long, and are very prettily lettered, "Honey for Sale." They are, in fact, an improvement on the sign-boards advertised in our price list. But they are made by a new process. They are, in fact, printed on a large printing-press made expressly to print sign-boards. The only way

I could buy them so as to sell them at this extremely low price was by buying 1000 "at a lick." Now, you see, I can not get my money back unless I sell an "awful lot" of them, and that is what's the matter. If you want them by mail, add 6 cts. for postage and tying them up.

REVERSIBLE FRAMES.

NIMSHI NUZUM, of Boothesville, W. Va., has sent us a model of the best device for a reversible frame, in my opinion, of any thing heretofore presented. I should say there was no question but that it would work, and the expense need not exceed two cents per frame. In fact, we will agree to furnish them for that, and I think likely they can be furnished for less, with proper machinery. It is made from a single piece of tin, by cutting and folding, without any solder, and yet it is strong and substantial when finished, like the device in the last volume, page 156. Friend N.'s device, with appropriate engravings, will be given in our next issue. We will furnish reversible frames, made on this plan, for \$5.00 per 100 in the flat, or \$6.00 per 100 put together and wired. Sample by mail, 15 cts.

P. S.—Dear me! who shall say again what can or can not be done? Our friend M. Broers, of Gonzales, Texas, sends us a reversible metal corner that beats friend Nuzum's, and all that have heretofore appeared. It is strong and simple, and reverses without any loose traps. We can furnish them for one cent each, and they can be put on any frame in a moment. This is the best thing at present writing, but no one knows what the next mail will bring.

CIRCULARS RECEIVED.

- J. S. Tadlock, Luling, Texas, sends us a 4-page circular.
 B. J. Miller & Co., Nappanee, Ind., send us a 12-page list of hives and supplies generally.
 Kennedy & Leach, Higginsville, Mo., send out a 6-page circular. Hives, and supplies generally.
 E. L. Gould & Co., Brantford, Ontario, send out a 40-page circular, giving much valuable information.
 F. Boomhower, Gallupville, N. Y., 12-page circular, printed at this office, and contains much useful information.
 Drake & Smith, successors to A. E. Manum, Bristol, Vermont, send out a 12-page circular, specially, white-polar sections.
 A very pretty 4-page circular, printed at this office, for A. F. Stauffer, Sterling, Ill. Specialty, chaff and Simplicity hives, Italian bees and queens.
 The H. F. Moeller Manufacturing Co., Davenport, Iowa, send us a 28-page circular of hives, and supplies for beekeepers generally. This firm also manufactures washing-machines.
 F. A. & H. O. Stillbury, Geddes, N. Y., send out a very pretty 22-page price list. One of their specialties is the Shipman automatic engine. It needs no engineer nor fireman, but runs by kerosene-oil.
 Friend Heddon sends us a very pretty 32-page catalogue, full of much valuable information. In it his new reversible frame is illustrated. This accomplishes the object completely; but you can not use the frames already in use, unless you enlarge your hives, or something of that sort. Friend H. does not advertise pure Italians or pure bees of any kind, if I am correct, but advertises a cross between the common bees and Italians. He has been for some years working with a particular strain. I should not be very much surprised if it were true that a good strain of hybrids will give better results, taking all things together, than pure Italians. Friend H. will certainly have one comfort in sending out queens: nobody can ever complain of him that he sent out hybrids.

FOR SALE OR EXCHANGE.

I have the following goods on hand, that I will sell cheap, or exchange for any thing useful to me. Fourteen second hand Pianos and Organs, six Sewing-machines, new, a large quantity of Sheet Music, and Instruction-books. Also, small instruments. All are the stock of my discontinued music-store.

2d

F. W. WALTER,
 Staunton, Augusta Co., Va.

IF YOU WANT

A GOOD ONE-PIECE SECTION CHEAP,

Send to us. Sample and Price List Free.

SMITH & SMITH, KENTON, HARDIN CO., OHIO.
 2trdb

100 Scroll-saw designs for 10c, for working brackets, easels, etc., etc. J. L. HYDE.
 Pomfret Landing, Conn.

DADANT'S FOUNDATION FACTORY, Wholesale and retail. See advertisement in another column. 3btfll

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BEE-KEEPERS' SUPPLIES, BEE-BOOKS, & LE CONTE PEAR-TREES FOR SALE.

One pear-tree sent postpaid for 40 cents.
2tfdb T. A. GUNN, Tallahoma, Tenn.

SECTIONS.

To nail, or dovetailed, 4 1/2 x 1 1/2, per 1000.....\$4.50
Other sizes, larger, to 5x6.....5.00
Send for price list and sample.

PARKER NEWTON,
EARLVILLE, - MADISON CO., - N. Y.
2-3-4

1885 ITALIAN QUEENS 1885

FROM MAY UNTIL OCTOBER.

Tested, \$2.00; Untested, \$1.00. Raised from Imported mothers (Root's Importation). Bees by the pound, \$1.00. 3-Frame Nuclei, good queens, \$3.50.

H. J. HANCOCK,
SILOAM SPRINGS, BENTON CO., ARK.
2tfdb

ALL DOVETAILED SECTIONS,
LANGSTROTH AND BROOD AND WIDE
CHAFF HIVES. FRAMES.
SHIPPING - CRATES, WIRE NAILS, ETC., ETC.
Send for Circular.

GEO. WHEELER, NORWICH, CHENANGO CO., N. Y.
2-3-4tfdb

FOR SALE.

As I intend to "go West" next February, I offer for sale my house and lot, and 50 stands of bees, all good Italians. Some of my queens were from A. I. Root, and some from J. A. Green, Dayton, Ill. I have more than I can take with me.

JAMES KINHORN,
SHEFFIELD, BUREAU CO., ILL.
23-4db

FLAT - BOTTOM COMB FOUNDATION.



High side-walls, 4 to 14 square feet to the pound. Circular and samples free.

J. VAN DEUSEN & SONS,
4tfdb Sole Manufacturers,
SPROUT BROOK, MONT. CO., N. Y.

VANDERVORT COMB FOUNDATION MILLS.

Send for samples and reduced price list.
tfdb JNO. VANDERVORT, Laceyville, Pa.

Names of responsible parties will be inserted in any of the following departments, at a uniform price of 20 cents each insertion, or \$2.00 per year.

\$1.00 Queens.

Names inserted in this department the first time without charge. After, 20c each insertion, or \$2.00 per year.

Those whose names appear below agree to furnish Italian queens for \$1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen be reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delay as may be unavoidable. Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with *, use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for \$1.00 before July 1st, or after Nov. If wanted sooner, or later, see rates in price list.

*A. I. Root, Medina, Ohio.
*H. H. Brown, Light Street, Columbia Co., Pa. 1tf
*Paul L. Viallon, Bayou Goula, La. 1tf
*S. F. Newman, Norwalk, Huron Co., O. 1tf
*Wm. Ballantine, Sago, Musk. Co., O. 1tf
*D. G. Edmiston, Adrian, Len. Co., Mich. 3tf
*Dr. John M. Price, Tampa, Hillsboro Co., Fla. 5-3
*S. G. Wood, Birmingham, Jeff. Co., Ala. 1tf
*Jos. Byrne, Baton Rouge, E. Baton R. Co., La. 7-5
*W. W. Turner, Oak Hill, Greene Co., N. Y. 7-5
*S. C. Perry, Portland, Ionia Co., Mich. 3tf
Will True, Chadwell, Clatsop Co., Oregon. 9-7
Jas. O. Fahey, Tavistock, Ont., Can. 1tf
*D. E. Jacobs, Longley, Wood Co., O. 1-23
*H. J. Hancock, Siloam Springs, Benton Co., Ark. 3tf
*E. T. Lewis, Toledo, Lucas Co., O. 3-1
*E. C. Vaughn, Columbia, Maury Co., Tenn. 3tf
G. M. Doolittle, Borodino, Onondaga Co., N. Y. 3-13

Hive Manufacturers.

Who agree to make such hives, and at the prices named, as those described on our circular.

A. I. Root, Medina, Ohio.
P. L. Viallon, Bayou Goula, Iberville Par., La. 1tf
C. W. Costellow, Waterboro, York Co., Me. 21-19
Kennedy & Leahy, Higginsville, Lafayette Co., Mo. 3tf
F. A. Snell, Milledgeville, Carroll Co., Ill. 1-13
E. T. Lewis, Toledo, Lucas Co., Ohio. 3-1
H. F. Mueller, cor. 5th st. and Western Ave.,
Davenport, Ia. 3-1
C. P. Bish, Petrolia, Butler Co., Pa. 3-13
Milo S. West, Box 202, Flint, Genesee Co., Mich. 3-13
F. M. Blanchard, Orwell, Ashtabula Co., O. 3tf

FOR SALE!

CHOICE SEED CLOVER AND POTATOES.

	By Freight or Express.		
	100 lbs.	1 peck	1 lb.
Alsike Clover.....	\$10.00	\$2.75	20c
White Clover.....	10.00	3.00	20c
Hall's early peachblow potatoes.....	1.25	50	15c
Ontario.....	1.25	50	15c

Address **E. S. HILDEMAN,**
Ashippun, Dodge Co., Wis.
Please mention this Journal if asked for the above advertisement. 2tfdb

TESTED QUEENS, \$2.00. Untested, \$1.00. 4-frame nuclei, \$3.50 and \$4.50. Mississippi wax-extractor, \$3.00. OSCAR F. BLEDSOE, Grenada, Miss. 3tf

WANTED, Wax to work into foundation by the pound, or for a share. For particulars address O. H. TOWNSEND, Alamo, Mich. 8-4d

HONEY COLUMN.

CITY MARKETS.

KANSAS CITY.—*Honey.*—Very little honey being received, and stock of 1-lb. sections about sold out. The stock of 2-lb. sections, California, is good and very low, while the low price of 2-lb. sections keeps 1-lb. sections low also. One-pound sections, 15¢@16¢ for good white comb in good style of crates; 2-lbs., 12¢@14¢; dark and old stock, 8¢@12¢. Extracted, California, 5¢@6¢; white-clover, 7¢@8¢; Southern, 5¢@6¢. Trade is looking brighter. *Beeswax*, none in market. **CLEMONS, CLOON & CO.,**
Jan. 22, 1885. Cor. 4th & Walnut St's., K. C., Mo.

CINCINNATI.—*Honey.*—The market for honey in all its branches was extremely dull with us since our last report. Manufacturers buy but little, and jobbing trade is slow, while retail demand is only fair; offerings are liberal of comb and extracted honey at prices at the option of the buyer. No change of quotations from last month. *Beeswax* is in good demand, and offerings are fair. It brings 26¢@30¢ on arrival. **CHAS. F. MUTH,**
S. E. Cor. Freeman and Central Avenues,
Jan. 26, 1885. Cincinnati, O.

CHICAGO.—*Honey.*—Market very quiet. Prices easy; stock heavy. California takes preference in the home demand. The cold weather does not permit of shipping at present, if there were any orders; but I don't know of any orders here this week. Extracted, very dull. *Beeswax*, 30¢ for yellow. **H. A. HURNETT,**
Jan. 21, 1885. 161 So. Water St., Chicago, Ill.

ST. LOUIS.—*Honey.*—No change to note since our last report. We quote to-day as follows: Southern extracted honey, in barrels, 5¢@6¢; half-barrels, 6¼¢. Northern, worth more. There is only a retail demand for comb honey. White clover, 15¢@16¼¢. Dark not wanted. *Beeswax* dull at 26¢@29¢. **W. T. ANDERSON & CO.,**
Jan. 26, 1885. 104 N. Third St., St. Louis, Mo.

BOSTON.—*Honey.*—Honey, very slow of sale; 15¢@16¢ for best white 1 and 2 lb. sections. Extracted, no sale. **BLAKE & RIPLEY,**
Jan. 21, 1885. 57 Chatham St., Boston, Mass.

DETROIT.—*Honey.*—The honey market is but fairly active. A good article is bringing about 14¢. **A. B. WEED,**
Jan. 21, 1885. Detroit, Mich.

FOR SALE.—I will sell honey in any sized cans (cans included) at—white clover, 11¢; buckwheat, 9¢; 1500 lbs. on hand. **H. BARBER, Adrian, Mich.**

FOR SALE.—600 lbs. white-clover honey in 1¼-lb. sections. **JOHN F. RACINE,**
Wallen, Allen Co., Ind.

FOR SALE.—500 lbs. of choice white-clover honey. Very light color, extracted. Who wants it, all or part? **WILL ELLIS,**
St. Davids, Ont., Canada.

FOR SALE.—I have for sale about 6 tons of honey in 5-gallon tin cans, put up in cases, two cans in a case. Also about one ton of comb honey in 1½-lb. sections. **C. S. LEWIS,**
San Jacinto, San Diego Co., Cal.

FOR SALE CHEAP.—500 or 600 lbs. of white-clover and basswood honey, in 1 and 1½ lb. sections, for one shilling per lb., delivered on cars here. **G. W. ALBRECHT, Dundas, Calumet Co., Wis.**

RASPBERRIES AND STRAWBERRIES FOR 1885.

Ohio, Souhegan, Tyler, Gregg, Cuthbert, Hansell, Crimston Beauty, Shaffer's Colossal, Raspberries; James Vick, Manchester, Sharpless, Wilson, Crescent, Chas. Downing Strawberries, and many other varieties not mentioned here. **PRICE LIST FREE.**
3 EZRA G. SMITH, MANCHESTER, ONTARIO CO., N. Y.

Foundation Machines, L. size, \$3.75.

Italian Bees, Queens, and Honey, a specialty. See new circular. **31tdb OLIVER FOSTER, MT. VERNON, LINN CO., IOWA.**

PURE ITALIAN BEES.

FULL COLONIES, NUCLEI,

AND QUEENS A SPECIALTY

If you intend buying bees or queens this season, send for my circular and price list. You will save money by so doing.

C. C. VAUGHN, Columbia, Tenn.

20 HIVES OF HYBRID, AND 55 HIVES OF BLACK BEES,

All in new Langstroth hives, will be ready for shipment by May 1st. Send for price list. Send all orders to **G. W. ALBRECHT,**
3-sdb Dundas, Calumet Co., Wisconsin.

BROWN L. eggs, \$2 and \$3 per 13. P. Rock, \$2; Wyandotte, \$2.50; Pekin ducks, 9 for \$1.50; Bronze turkeys, 25 cts. each. **JOHN H. DANIEL,**
Box 187. Cumberland, Guernsey Co., O.

N. B.—The mill advertised by me in last number is not an old and worn-out one. It has not been used more than ten hours, and hence is a new mill. I wish to sell it, because I am going to quit bee-keeping, and I can not get wax in this season. **3**

IMPORTED CARNIOLANS.

Grades and Prices of Queens: Spring June (J. & A.) Fall
Finest Selected Queens, each: \$ 7 00 6 00 \$ 5 00 \$ 4 50
Fine Product " " 6 00 5 00 4 50 4 00

Reared in Carniola. Safe arrival by mail guaranteed. Same prices for imported Italians. For circular, address MRS. FRANK BENTON, ASSELGIA, N. Y. Send greenbacks registered, draft or postal-order to FRANK BENTON, MUSKIE, GERMANY. **31tdb**

NOW READY! NOW READY!!

500 U. S. STANDARD HONEY-EXTRACTORS, 1000 TOLEDO SMOKERS,

Both of which took the first premium at Ohio, Indiana and Michigan Tri-State Fair in Sept., 1884. We also manufacture and deal in a full line of Apianian Supplies. Send address for circular.

E. T. LEWIS & CO., Toledo, Lucas Co., O.

Wholesale and Retail.

BEE-KEEPERS' SUPPLIES

Poplar and Basswood Sections a Specialty.

SEND 2-CENT STAMP for SAMPLE and PRICE.
S. D. BUELL, UNION CITY, MICH.
21tdb

HYDROMETERS FOR TESTING HONEY.

We have just succeeded in getting a beautiful little instrument, all of glass, that will indicate the density of honey or maple syrup, or any kind of syrup, by simply dropping it into the liquid. I am greatly surprised that we can furnish so beautiful an instrument for so small a sum of money. Price 35c. By mail, 10c extra. Per Do. \$3.00; per 100, \$25.00. **A. I. ROOT, MEDINA, OHIO.**

DADANT'S FOUNDATION FACTORY. WHOLESALE AND RETAIL.
See advertisement in another column. **31tdb**

We can now furnish 12 quart sap-pails, charcoal tin, fire-proof bottoms, for only \$17.00 per 100.

No more copies for April 1, 1884, wanted, but would like a few for April 15, 1884.

We are very thankful to be able to say we have 6090 subscribers, which is a gain of almost 1000 over our January number, and 258 more than we had one year ago at this time.

DISCOUNTS FOR FEBRUARY.

As trade is not very rushing yet, we will allow on foundation-mills, comb foundation, and sections, a discount of 10 per cent until Feb. 15. From Feb. 15 until March 1, a discount of 5 per cent.



Vol. XIII.

FEB. 1, 1885.

No. 3.

TERMS: \$1.00 PER ANNUM, IN ADVANCE.
2 Copies for \$1.90; 5 for \$2.75; 6 for \$3.00;
10 or more, 75 cts. each. Single Number,
5 cts. Additions to clubs may be made
at club rates. Above are all to be sent
TO ONE POSTOFFICE.

Established in 1873.

PUBLISHED SEMI-MONTHLY BY

A. I. ROOT, MEDINA, OHIO.

Clubs to different postoffices, NOT LESS
than 90 cts. each. Sent postpaid, in the
U. S. and Canada. To all other coun-
tries of the Universal Postal Union, 18c
per year extra. To all countries NOT of
the U. P. C., 42c per year extra.

NOTES FROM THE BANNER APIARY.

NO. 62.

BOILING SUGAR SYRUP.

FRIEND ROOT:—You say, on page 6, that you are glad to know that I succeeded in making feed without boiling it. I *succeeded*, but the feed *crystallized*. Unless the feeding were done early enough for the bees to work it over and seal it up, I should certainly boil it. Almost every one who is in the bee business very extensively has a shop, and in that shop there is a stove, and upon that stove the feed can be made with no annoyance to the family.

HEDDON FEEDERS AND WARPED COVERS.

No, I didn't purchase my feeders and covers of Mr. Heddon, but made them myself from samples obtained of him. Will you pardon me, friend Root, if I say, that to one who has for two years used the Heddon feeders and covers, the manner in which you cling to the idea of warped covers is almost amusing? There is no trouble in buying lumber that is not warped. This lumber can be planed perfectly true and smooth at a planing-mill. Now, then, does it require any great mechanical skill to saw the lumber up into the proper lengths for covers, nail a cleat to each end, and paint the cover? On page 47 you say: "During the convention it was made plain to me for the first time why people wanted this honey-board." Perhaps you are also at sea in regard to the cover for the Heddon feeder. This view of the matter is further strengthened by your concluding sentence in the reply to Mr. Heddon's article on page 9, in which you speak of the "stiff rim to hold the cover-boards from warping." Friend R., the cover has no rim.

DOOLITTLE'S COMMENTARY

On page 51 is, so far, all right. In fact, it appears to me to be an enlargement and explanation of my article. Some of the explanations and reasons given by Mr. Doolittle appear to me as superfluous, being almost self-evident, as it were, while others are quite important. I shall look forward with interest to reading the remainder of his comments.

SIZE OF SECTIONS, AND MORAL PATENTS.

Friend Hutchinson:—I have been thinking I would write you once more on the section subject, but have not found time until now. Since you published my letter, and replied to it in GLEANINGS, a bee-keeper from Mauston, Wis., has visited me, and we had quite a discussion on sections. His crop this year was about 10,000 lbs. of comb honey; it was stored in sections $4\frac{1}{4} \times 5 \times 1\frac{1}{2}$, and he likes that size very much. He says they weigh exactly one pound each when filled in the Heddon case, or something similar, and that the extra length causes them to be ripened and finished sooner than the regular size. He says that a $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$ section will *not* weigh a pound; and if you look at Mr. Heddon's circular, p. 20, you will see that Mr. H. says so too. "When doctors disagree, who shall decide?" Have you tried it *yourself*? I want to make my cases for next year, and how to make them is the question. Don't you think the $4\frac{1}{4} \times 5 \times 1\frac{1}{2}$, on account of its larger surface for evaporation, is the one to adopt? Then it *looks* larger, thus having an advantage in selling. If we are to use the case method, why cling to the old size of section, whose only merit is in just filling an L. frame? The larger size will cost no more, and I think would be stronger to ship.

What do you think of Mr. Heddon's closing paragraph in his article in GLEANINGS for Dec. 15? Does that not savor of monopoly? It seems to me he is putting a sort of moral embargo on us, that, if carried out, would amount to a moral patent, without any of the expense of a real Government protection. It hits me right at home, as I was thinking of making his style of case to sell next season. I could sell them at one-half his prices, and yet make good wages. Do you think there is any moral wrong in so doing? If I mistake not, you are a Christian, and

I ask you as a brother for your opinion. I should not want to go into any thing that had even the appearance of wrong. Please give me your idea from a moral, not a business, standpoint.

Yours truly,— C. A. HATCH.
Ithaca, Richland Co., Wis., Dec. 29, 1884.

To the above I replied as follows:

I have used 4000 $4\frac{1}{4} \times 4\frac{1}{4} \times 7$ -to-the-foot sections, and they will not weigh a plump pound; but it is so near a pound that I did not hesitate in deciding that a section of that size, and plump $1\frac{3}{4}$ wide, would weigh a pound. But, suppose a section *does* lack $\frac{1}{2}$ ounce, or even an ounce, of weighing a pound, what is the objection? It will pass for a pound section, and dealers prefer a section that falls short to one that overruns. I do not, and would not for a moment, cling to the $4\frac{1}{4} \times 4\frac{1}{4}$ because eight of that size fill an L frame, as that method is, I believe, passing away. I cling to it because it is a regular size, and bids fair to become the standard size, and a standard size would be a blessing to everybody. Other sizes may be bought as cheaply now, in most places, but it may not *always* be so, and is not now in some places. Should you ever wish to sell your apiary, it would be more salable if your fixtures were "like other folks'." Were not the sections in your friend's apiary finished more quickly because of their *thinness*, rather than because they were $\frac{3}{4}$ of an inch taller? Are you not mistaken in thinking a large comb will bear transportation with greater safety than a small one?

I do think that Mr. Heddon would be pleased if others would not manufacture his wares for sale, and he has set the example by refraining from manufacturing *other people's* inventions. Did all have such clear ideas of right and wrong as you have, patents would be unnecessary. Were I you, I would write to Mr. Heddon and learn how he feels about it. Can I publish your letter and my reply?

As ever yours,— W. Z. HUTCHINSON.

Mr. Hatch replied as follows:

Friend W. Z. H.—It seems I did not make my meaning clear, for you say: "It must have been the thinness that caused the combs to be finished first." That was just the point I *meant* to make; that is, the extra size would, of course, make them thinner, if the weight remained the same. I give up the other point as to the larger combs standing shipment better. I fear you give me credit for having clearer ideas of right and wrong than I deserve. If you think any good can come from having my letter published, of course you can do so; but perhaps I would have taken more pains in the manner of saying things had I known that my letter would be seen by other eyes than yours.

C. A. HATCH.
Ithaca, Wis., Jan. 8, 1885.

There is no question but that thin combs are more quickly finished, but it does not necessarily follow that the thinnest combs are the most profitable to raise. If eight sections are used in place of seven, the cost of sections, fdn., and manipulations, is increased one-seventh. I see no way in which the question can be settled, except by careful experiments upon quite an extended scale. I have now 5000 section boxes, $4\frac{1}{4} \times 4\frac{1}{4}$ by $1\frac{1}{2}$, and I shall order 5000 more that are $4\frac{1}{4} \times 4\frac{1}{4} \times 7$ to the foot, and I shall select, say, 40 colonies, and upon them use only the sections $1\frac{1}{2}$ inches wide, and upon 40 other colonies I will use only those sections that are "7 to the foot wide." In this manner I hope to throw some light upon the subject of which width is the more desirable. Will others please do the same?

In regard to inventions, discoveries, and patents, I should say that the inventor has as good a right to his invention as a wood-chopper has to his cords of stovewood. Unfortunately for inventors, many of those who would consider themselves disgraced by stealing stovewood, are not troubled with conscientious scruples in appropriating inventions, hence the patent laws and their attendant abuses. There seems to be a growing disposition among bee-keepers to refrain from manufacturing for sale the invention of another, when the inventor is himself manufacturing the article for sale; or, if the in-

ventor does not care to manufacture his invention, the one who *does* commence making it for sale is usually willing to pay the inventor something for the privilege, without putting him to the expense of getting a patent; and when a man thus pays for the privilege of manufacturing for sale, his "right" is usually respected. W. Z. HUTCHINSON, 68—94.
Rogersville, Genesee Co., Mich., Jan., 1885.

BEE CULTURE IN FLORIDA.

A VARIETY OF QUESTIONS, AND FRIEND HART'S ANSWERS TO THE SAME.

MOSQUITOES and sand-flies are seldom very troublesome at Ormond or Daytona, on the Halifax River; very few at Enterprise, and almost none at Orange City, De Land, Lake Helen, and other settlements along Orange Ridge. I think all first-class locations for bee-ranches in this State are troubled more or less by these pests during a portion of the year, but I have never known any one to be entirely eaten up by them, as many of our pine-land neighbors have stated. In fact, after we get fixed for them we manage to live very happily.

At the above places there are quite large settlements of pleasant, intelligent, and cultured people.

We never have such extreme heat here as at the North, owing to the formation of the State, which lies between the Gulf of Mexico and the Atlantic Ocean. It is always comfortable in the shade in summer, and has been so far this winter, as we have had no frost, except in spots.

I do not think biliousness is much more prevalent here than at the North. I have been troubled less in that way here than there. Near the mouth of the Miami River is a very healthful location, but not more so than some other portions of the State.

I think there is regular transportation from Miami to Key West, and from there north.

Pineapples, cocoanuts, guavas, and other tropical fruits can be raised in that part of the State with good profit. I think canning guavas and other fruits could be made very profitable, from Merrett's Island, on Indian River, south; or on the southwest coast of the State.

I can not advise a person where to locate and carry on other kinds of business in connection with an apiary, unless I know what that business is to be. Generally speaking, the north third of the State is considered a farming country; the middle third, the "Orange Belt;" and south of it, tropical fruits and truck-growing are getting to be the leading industry.

Life and property are as safe here as elsewhere, except for the hogs that run loose, and often break through fences, and destroy crops. We hope soon to have laws compelling their owners to fence them in.

The prices obtained for our honey are the same as those received for white clover, as most of it is shipped to the Northern markets, and is of as good quality.

Write to Hon. C. Drew, agent for the Bureau of Immigration, Jacksonville, Fla., for information as to transportation routes. Send him six cents for pamphlet issued by the Bureau.

Prices of orange-groves have a large range, eight hundred dollars being about the lowest.

New Smyrna, Fla., Jan. 12, 1885. W. S. HART.

BOOMHOWER'S APIARY.

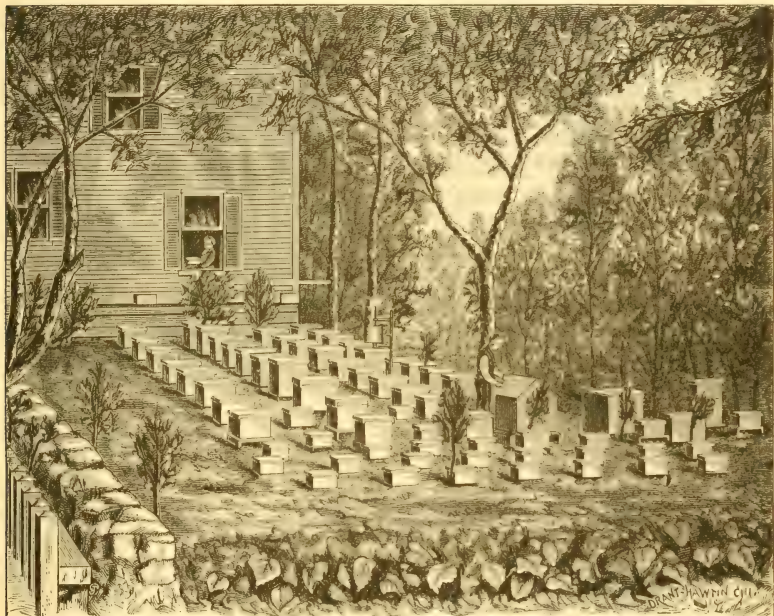
THE HOME AND APIARY OF ONE OF OUR A B C SCHOLARS OF EIGHT YEARS' EXPERIENCE.

WE take pleasure in presenting to you in the accompanying picture a glimpse of a bee-keeper's home, and the arrangement of his bee-hives.

As friend Boomhower has sent us no explanation, we shall have to pick it out ourselves, for what I see. The very large hive where friend B. stands at work, we should think must be a chaff tenement hive. The engravers, not understanding bees, have probably omitted several details that a bee-keeper would have got in had he done

he receives pay accordingly. He is the architect of his own fortune.

I suppose the view was taken before the children got home from school, so you see none of these little prattlers about, and none near friend B.'s elbow, saying, "Pa, pa, may I have this?" etc. Did you ever think how much a man can accomplish by working steadily day after day, week after week, and year after year? If bee culture does not occupy all his time, or if he decides not to invest too much in bees in the start, he can at the same time have his garden, raise small fruits and berries, and have a great many other revenues besides that from his bee-hives. It is true, he has to battle for



FRIEND BOOMHOWER'S APIARY, GALLUPVILLE, N. Y.

the work. The small hives are evidently for queen-rearing. Some sort of instrument stands near the trees, which we hope friend B. will explain in some future letter. Very likely the picture was taken some June afternoon. Mrs. B. has finished her work, dinner things are washed and put away, and while she sits at the window with her magazine she looks out occasionally to where her husband is at work. Is not a bee-keeper's life in many respects a pleasant one? He is his own employer, and has only himself and his Creator to please. The blue expanse above is the roof of his workshop, the free air of heaven is all round about him, he is near his home—in fact, in his own doorway all the long hours of the day. If he works from early dawn until late at night,

success, and who does not anywhere? In all these things there is a sort of survival of the fittest going on; but a really industrious man, who plans his work and exhibits judgment and wisdom in the bestowal of his energies, rarely fails to gain at least the comforts of life. And then, dear friends, where he can make a living on his own premises he has one very great advantage over those who work for daily wages. No strikes, no shutting down of factories affect him—at least, not directly. If he keeps informed in regard to the rural industries of the day, he usually has plenty to do; and if times are dull, and the income is necessarily small, he must cut down expenses, and cut off luxuries. To tell the truth, I believe that thousands of people are happier while

cutting down expenses, and cutting off luxuries, than they are, as a rule, where they have money so plentiful that they can purchase almost every thing they think they need. Friend B. sent with the photograph the following brief letter:

I send you a photograph of my home apiary and queen-yard. I should be pleased to see an engraving of it in GLEANINGS. Eight years ago, when I first became acquainted with your journal, I never thought that I should have an apiary that would be shown in GLEANINGS; and if you will have an engraving made of the photograph, I will send you \$5.00 per year until the engraving is paid for.

Gallupville, N. Y.

F. BOOMHOWER.

I have allowed the concluding clause to go in print, because some of the friends have felt hurt when I told them I could not afford the expense of engraving their many apiaries, and that the few we did engrave must show such marked advantages that it would be profitable to our readers. The above picture cost an even \$40.00 for the woodcut alone, and we will have as many engraved as you choose, if you will pay the expense of the engraving, as friend B. has done. The picture is to be your property after it has once appeared in GLEANINGS.

HEDDON'S LANGSTROTH HIVE.

AND SOMETHING ABOUT HEDDON'S SYSTEM OF MANAGEMENT.

REGARDING the hive I have just sent you, I will give you most of the points that I claim as original preferences, devices, and inventions of my own. I prefer no wider space than 11½ inches, for 8 frames. I prefer to have the ends of the brood-chamber thicker than the sides that are nailed to them, and both ends and sides thicker than the bottom that is nailed to them. I prefer a cover never more than ¾. I much prefer to have the capacity of my hives not to contain over 8 L. frames. I would use no other than a light readily movable hive.

I find no gain in having a slanting alighting-board for the bees. I prefer thick end-bars and top-bars for my frames. I prefer a V top-bar, where no wires and only foundation starters are used in the frames.

My inventions consist first, of the reversible bottom-stand, so constructed as to take the bottom-board cleat, and let under no bees in front, and give earth ventilation behind, and being perfectly simple and cheap.

Second, the manner of cleating the bottom-board, as combined with the stand. (In moving hives we never have to move the stands.)

Third, the sink skeleton honey-board, so constructed as to form a bee-space above and below its slats; its slats so arranged as to exactly break joints with the top-bars of the brood-frames, thus preventing the attachment of bits of comb, and at the same time giving most perfect freedom to the passage of the "heat and odor" of the hive, and consequently the workers.

This honey-board is most easily adjusted or removed; at the same time as perfectly allowing the same easy adjustment or removal of any surplus receptacle resting upon it. It has a strong tendency to keep the queen below it—so much so that

queen-excluding honey-boards are of no use to me in my system of comb-honey production. It is so constructed as to be at once adapted to hives not designed for it, and to leave the hive perfectly bee-spaced, should one not have enough of them, and have to use the hive without it, as I have had to do with a part of mine several seasons. I consider this honey-board almost an actual necessity between stories of combs, when running for extracted honey. I think it my greatest invention. I have never found an objection to it.

Next comes my surplus case, which just now seems to be much liked by all practitioners, and which I think the best arrangement yet in use, for the production of comb honey without separators. I think, however, that some who are now using them will be forced to add separators to them, or abandon them for some style of super that uses separators. Not all bee-keepers can succeed satisfactorily without separators.

I have thoroughly tested metal rabbets, both with and without metal corners, and I do not like either. I used 25 hives containing them, for four years. I made my first metal rabbets (one hive, no corners) in 1871, after the direction of Mr. R. C. Otis, who visited me with sample, and owned the Langstroth patent for this and other States.

I call this hive "Heddon's Langstroth hive," for it is an L. hive with my modifications, and it is much modified. I consider Mr. Langstroth's bee-space above the brood-frames, as his greatest invention. By the reading of the specifications of his patent, I infer that he does also.

I have no patent on any claim of my hive. It seems to me there is as much there to patent as in any other hive that has been patented since Mr. Langstroth's. I never thought of a patent till I found there were men contemptible enough to wait till I had invented, and still longer till I had introduced, and then advertise "Heddon's hive," cutting the price a little, and the quality, and quantity of trimmings a great deal, giving no more material for the money than I did, and no valuable principles at all, except as they thus gave what rightfully belonged to another.

Now, your course of paying a reward for meritorious inventions, either that you might manufacture or might be placed in the hands of your readers, I feel sure has benefited the growth of our science and the subscription list to GLEANINGS. It was a just and wise act.

I know now of a bee-keeper who is using fixtures and methods that I know of (and I can not guess how many that I do not know of), that the bee-keepers of the world would be glad of. I asked him to write for our bee-papers, and tell all of his best thoughts. His reply was, "They would benefit the unjust as well as the just; the undeserving as well as the deserving. They would be used in direct competition with me; and the way of the business world is to protect one's own interests." I should never desire a patent to prohibit any user from making for his own use; but after my recent experience I see the wisdom and justice of the exclusive-right system, as adopted by every civilized nation; and should I, in time to come, again invent anything I think worthy of protection, I shall seek such protection of rightful pay for labor expended. While I appreciate your exclamation on page 620, 1884, as well as the many many inquiries I have had, asking if I gave my honorary consent to make

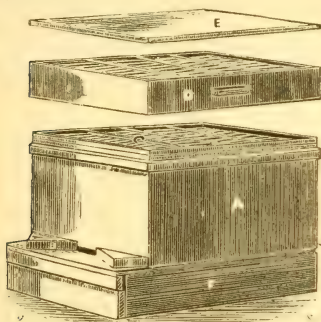
and sell my labor, I have found out it is only harboring the ideas of the perfectionist to imagine that our profession is not like others, more or less filled with those who will do right only when forced to by the strong arm of the law.

I feel that the great part of our profession need no laws, patent or any other; but as long as we harbor within our ranks quite a number that do, I say patent when you think best, and give us the results of your many wakeful nights (when you were stealing from your lease of life); *patent it*, but give it to us; don't keep it under a bushel. We want it, and are willing and can afford to pay for it.

My style of reversible frame as inclosed in the hive is described in A. B. J. Comments and questions are now in order. JAMES HEDDON.

Downglac, Mich., January, 1885.

Below we give an engraving of the hive in question.



HEDDON'S LANGSTROTH HIVE.

E represents the cover, which is a plain piece of board $\frac{3}{4}$ inch thick, cleated across the ends. Very likely a board planed as thin as this, and only $12\frac{1}{2}$ or 13 inches wide, would not warp to make much trouble, if kept well painted. But we have had very much trouble from covers warping and twisting, when made 16 inches wide and $\frac{3}{4}$ inch thick for Simplicity hives. In fact, we never succeeded in getting any sort of a cover for Langstroth hives that would not, sooner or later, let bees get under the edges, until we adopted our well-known Simplicity cover and bottom-board.

The case of sections D is so well described at the end of this article that we need not go over it here. The above case has three division-boards, as will be noticed, giving room for 4 rows of sections, 7 sections in each row. As a width of sections 7 to the foot has been so many times mentioned, we presume this case is just 12 inches wide. It holds the same number of sections, it will be observed, as does our case, only they are narrower. The sample hive mentioned has not yet reached us, but I presume the bottoms of the sections are flush with the bottom edge of the case, except the sheet of metal that separates them.

G represents the skeleton, or sink honey-board, as friend H. calls it, which is the special feature of his system of management. I will have a good engraving made of this

honey-board for our next issue, nothing preventing.

Hive A is simply an ordinary Langstroth hive, omitting the sides of the portico, and using the ordinary triangular blocks to adjust the entrance. The arrangement of the bottom-board and stand will be given in our next.

As mentioned in another column, no one is expected to advertise Heddon's Langstroth hive unless he first makes arrangements with Mr. H. for so doing; and even after having made this arrangement we are all to sell them at his prices. These we extract from his circular, as below:

All who are acquainted with our hive, know that what we mean by a "hive in the flat" includes about twice as much as is usually sold under that term. There being two surplus stories, makes it really a three-story hive, as we sell it, either made up or in the flat.

One hive made up, complete, with 2 cases and 56 one-pound sections..... \$3.00
One hive complete, with two broad-frame supers and 48 one-pound sections..... 3.50
One hive, arranged for extracting..... 3.00

PRICE IN THE FLAT, FOR COMB OR EXTRACTED HONEY.

One hive, nailed together..... \$2.00
Two to five hives, all flat, each..... 1.50
Six to ten hives, each..... 1.40
Eleven to twenty-five hives, each..... 1.30
Twenty-six to fifty hives, each..... 1.25
Fifty-one to one hundred hives, each..... 1.20
Heddon's skeleton sink honey-boards, each..... .25
per doz..... 2.50
per 100..... 15.00

We think the above cheaper than most beekeepers can make them, as it requires experience and a special form to make these honey-boards as they should be made. We sell them only made up complete. With these boards, no queen excluders are of any use in the production of comb honey, and they are equally advantageous in the production of extracted honey.

On page 81 the question is raised, whether anybody has a right to make Heddon's style of case. If I am correct, friend H. does not claim that the case is his invention; and so far as I can see, it is substantially the case used by J. P. Moore, of Binghamton, N. Y., as far back as 1876. Below I give you some extracts which I have taken from page 72, April GLEANINGS for 1876:

Well, I see you don't want any advice about hives, so I suppose this will be paper thrown away; but if you will read it and consider, I am satisfied: for if you don't have the best rack in America, the responsibility won't rest with me. I know you won't adopt it, because you are like me and a great many other bee-keepers — you can't be told any thing till you have the experience and see the reality.

Inclosed is a description of our rack as we now make it:

J. P. MOORE'S RACK FOR BOXES AND SMALL FRAMES, LANGSTROTH SIZE.

Take stuff 7-16 inch thick, by 2 $\frac{1}{2}$ wide; cut 4 cross-pieces $15\frac{1}{2}$ inches long, and 2 side-pieces $21\frac{1}{4}$ inches long. Nail through the side-pieces into ends of cross-pieces; put 3 finishing sides into each end of every cross-piece, putting together so as to form 3 boxes or spaces, without top or bottom; each to be $6\frac{1}{2}$ inches wide by $15\frac{1}{2}$ long by 2 $\frac{1}{2}$ deep. Get Russia sheet iron, cut with a machine, 2 pieces for middle $\frac{3}{4}$ inch wide, and 2 for end-pieces $\frac{3}{4}$ inch wide; punch 5 holes in each, on a block of hard wood, with a square-end punch, so as to take a piece out; punch the $\frac{3}{4}$ -inch ones along the middle, the $\frac{3}{8}$ ones a little nearer one side, and nail these irons on the bottom edges of the cross-pieces of the rack, with $1\frac{1}{2}$ -inch finishing nails, letting the edges project $\frac{1}{4}$ inch into the spaces, to support the ends of boxes and small frames, when set down into the spaces. Use boxes and small frames $6\frac{1}{2}$ inches long in this rack, of such width as to leave $\frac{1}{8}$ inch shake.

J. P. MOORE.

Binghamton, N. Y., Feb. 22, 1876.

If the above describes what friend Hatch wants to make, of course there is nothing to prevent his making as many as he chooses, and selling at whatever price he thinks proper.

GAURA BIENNIS.

AN UNFAVORABLE REPORT.

MR. ROOT:—I see in recent numbers of GLEANINGS that *Gaura biennis* is still occupying your attention. As I have made it the subject of some investigation, perhaps my experience might be interesting.

In the fall of 1883 I found my bees bringing in great loads of honey, very early in the morning, although nearly all honey-gathering seemed to stop at about seven o'clock. Anxious to discover the source of this honey, I walked out along the river one morning before sunrise, and there, alongside of a patch of sweet clover I found a sight that reminded me at once of your experience with the spider plant. On tall, coarse-looking plants were numerous curious-looking flowers with long sprawling petals of a delicate pink color. The beauty of the flower, however, was completely eclipsed, to a bee-keeper's eye at least, by a large drop of nectar which hung in the midst of the long downward-turned stamens—a drop so large, in many cases, that one bee could not take it all.

As I looked upon the globules of nectar glittering in the rising sun, and found that when one drop was taken away another began to form immediately from the fluid which could be seen issuing from the nectaries of the flower, I thought I had made a great discovery. Visions of barrels and tons of honey floated through my mind, and I longed to have all the roadsides and waste places filled with this wonderful honey-plant, with bees enough to gather all of the honey.

I broke off a branch of the plant, and, going home, interviewed the botany before the breakfast-table had any charm for me. After settling in my mind that it was the *gaura* I began collecting information in regard to it, and found that it was apparently a new plant in the locality; for while it was found abundantly along the roadsides and on the sandy river-bottoms, no one remembered having seen it before that season. In the meantime, the hives were filling up slowly with a very dark, thin, and unpalatable honey. Under the circumstances I concluded to learn more about the plant before reporting on it, and an article written on the subject was consigned to the flames.

Last season, *Gaura biennis* was conspicuous by its absence, as only a very few scattering plants were to be found. Again I concluded to wait; and but for your remarks in GLEANINGS of Jan. 15 this would not have been written. I will say, in defense of *gaura*, though, that some of the honey which I have yet, has improved very much since it was gathered.

J. A. GREEN, 118—118.

Dayton, Ill., Jan. 22, 1885.

Friend GREEN, I am sure we are very much obliged indeed, even though you have tumbled our air castle all into fragments. Please send me a sample of the honey in the little vial we mail you in a block. Now, I wonder if the character of the honey is not largely affected by the soil. It is so with melons, and also with sugar-cane, especially early amber. Is it not possible that the rank soil along the river-bottoms had something to do with the flavor of the nectar? Another thing, I should not be surprised if it transpire that the spider plant, Simpson plant, *gaura*, and others, would not bear honey of

any account, unless they have a strong deep soil. The *gaura* that was in our garden last season grew where sods had been piled for a foot or more. Some poor clay was mixed with it, however, and thrown over the top. The nectar looked so transparent and beautiful, it seemed to me as though it must produce nice honey. Are you quite sure your dark poor honey came from the *gaura*? From your statement it would seem quite probable, but yet we sometimes get sadly misled in these things. I do not wonder that your breakfast had no charms while you were hunting the botany, friend G. Can any other brother give us a hint? Another fact: Experience seems to show that many of our plants bear honey only occasionally; that is, it is only once in several years that we have a season just right for that particular plant. Honey reports have verified this repeatedly. Some plant hitherto unknown is found everywhere in the greatest profusion, dripping with honey, and next year it has all disappeared, and so on for several years after. This fact makes the raising of plants for honey a very uncertain speculation.

A VALUABLE HINT FROM ONE OF OUR CANADIAN BEE-MEN.

"Honey on a Stick, at 5 cts. a Lick."

A SHARP RUSE TO GET RID OF CROOKED AND IRREGULAR SECTIONS.

I SENT you a telegram one Saturday evening, ordering 25 queens, and on the next Wednesday morning I received them all, without a single dead bee. That is what I call business.

Our honey crop in this locality is hardly half that of last year. I have just finished feeding 7 barrels of granulated sugar to 157 stocks.

We exhibited over a ton of honey at our county show here last week, and took in over \$80.00 in cash for honey sales, chiefly in quantities of a pound or less. My son cut the pound sections into four triangular pieces by cutting diagonally from corner to corner, and then breaking the section into four pieces, to each of which a triangular chunk of honey was attached, and the furore he got up in the crowd for treating each other to "honey on a stick" was a new feature in the show. He also had extracted honey in 5, 10, and 20c. packages, but the comb honey cut in the presence of the crowd was so toothsome that it became "all the go." They are saying now that the bank-bills taken in by the treasurer were stuck together with honey, and that the demand for dry goods has increased, several dresses being injured by honey in the crowd. If any one has any crooked or bulged sections which he can not crate, this is just the way to turn them into cash at twenty cents each, because they will do to cut up, just as well as the best grade. S. CORNELL.

Lindsay, Ont., Oct. 9, 1884.

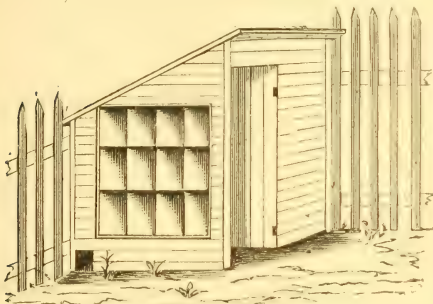
Well, friend C., your son is a genius indeed, if he got that up himself. The only drawback I see is, that in cutting the honey a good deal of "juice" would run out; but perhaps he let this drip into some of those cans, and then he would be that much ahead. Just about lunch time I should think it might be quite an idea. I have myself been studying about comb honey for a lunch, for a good many years, but I think your idea is ahead.

POULTRY FOR BOYS.

A SHORT TALK ON THE HEN BUSINESS, FOR THE BENEFIT OF THE JUVENILES.

ONE of the pictures that are in our tencent poultry-book pleases me so much that I have borrowed the electrotype to show it to you here in GLEANINGS.

You see, boys, this house is to be put in one corner of the dooryard. I suppose the northwest corner would be the best place, if you have such a one available. This will allow the sun to shine in at that window on the south side, and the entrance for the hens is also on the south side, while the door is on the east side, where we have fewest cold storms and winds; and when you open the door to go in, there is not so much danger of letting a cold blast strike some old biddy with a setting of eggs. I think if I were you I would have a tight board fence on the west side, unless there is a barn or some sort



A BOY'S POULTRY-HOUSE.

of building to keep the wind off. Or if it should be handy for you to put it where the manure from the horse-stables can be banked up on the north and west sides, all the better. If the pile get so high in January and February that a part of it goes on the roof, still better. On the north side of the building place the roosts, and under them have a long box, to be kept always full of ashes. Bury some corn in this box of ashes for a day or two, and the hens will get such a habit of scratching in it that they will scrape the manure all over every day, so that it will be so inoffensive you can handle it without finding it in any way disagreeable. Once in a while you can shovel it out and put it in a barrel, and then put in some fresh ashes. Underneath this ash-box you can have your nests. The best thing that I know of for a hen's-nest is a flour-barrel with a hole cut in one side, big enough for a hen to crawl in. Set this barrel under the ash-box behind the door, and your old biddies won't feel as though their preference for privileged privacy were violated every time somebody opens the door. When the weather is warm, the door can be left open all the while. The size of this house should be 4 x 6 feet, and 6 feet high on the side where the door is. In the summer time, take out the window and slide it under a couple of cleats put up under the roof, where none of the

glass will get broken before it is wanted again next winter. Some coarse wire netting may be put over the window when it is taken out in the summer time. Any boy, twelve or fourteen years of age, should be able to build this house well himself. The sash he can buy, or get one from some old building.

Now a word in regard to the contents of that ash-box under the roost. One spring when my father was planting corn I told him I would plant half of his field myself, if he would give me all the corn my half produced more than his half, and I told him that he might have his choice of the two halves. He took me up right on the spot. Do you ask how I knew my half would beat his? Why, I knew it would because I was going to put a handful of ashes and poultry manure under every hill on my side, and I knew he wouldn't fuss to do that with his side. Well, my side did beat; and although

I can not remember how much more corn I got than he did, I remember there was enough, or nearly enough, to keep my chickens through the winter; and we can set it down, that if the manure is properly applied, in the way I have suggested, it will pay for the food the fowls eat, and you will have your eggs and chickens clear gain, or pay for your labor.

May be somebody will say such articles as this have no business in a bee-paper; to which I reply, that if you look in GLEANINGS you will see that "peace on earth, good will toward men," comes before a word is said about bee-keeping. I am getting the children interested in rural pursuits, which goes a very great way toward the fulfillment of the above little text.

MICHIGAN STATE CONVENTION.

WHAT I SAW AND LEARNED.—NO. 3.

I MENTIONED in my last, that the sense of the convention seemed to be that wide frames for holding separators were to be discarded. They are to be used only in a crate placed over the honey-board, as described last month. The favorite way of supporting the sections seems to be one used a good many years ago, and illustrated in GLEANINGS as long ago as 1876, January issue. The crate is what might be called a half-story, placed over the honey-board. The sections are put in the same way as they are in our crate, illustrated on page 19 of our price list, only that a division-board made of thin lumber separates each row of sections. The sections are held from falling through by means of a strip of tin or Russia iron nailed to the lower edge of this division-board. This leaves the bottom-bars of sections just $\frac{1}{2}$ of an inch from the honey-board, and there is nothing to prevent the bees from walking over the outside of the section; that is, the bottom-piece of the section. I have always objected to this, and I think yet that I do not want a bee to ever look at, much less

step on any part of a section box; and to protect the sections I would have them rest on a thin strip of wood, the way our crates are all made. Prof. Cook also said that the bees should not be allowed access to the outside of the sections. The crate he is using, however, does permit the bees to get to them just the way I have described. President Hutchinson and others declare, however, that, with the honey-board, the bees did not attach bits of wax or propolis to the sections. While at the college apiary with Prof. Cook and the other friends, I noticed that his crates and honey-boards were covered with bits of comb, and the same sort of varnish that our bees spread over every thing here. It is quite likely that the damage they do in some localities is trifling; but I should want, if possible, to avoid the necessity of being ever obliged to scrape and sandpaper sections filled with honey, in order to have them look fit to take to market. With the arrangement mentioned we can have sections of different widths in the same crate, if we choose, by dispensing with separators. It is true, a separator could be used for each section; but the expense for such an arrangement is so great I believe it is mostly abandoned.

REMOVING SINGLE SECTIONS, AS SOON AS SEALED OVER.

Another point comes in here, however, which was discussed considerably. If we dispense with separators, we can not look over our hives, and pick out the central sections, or a section here and there, as soon as it is finished. The difficulty is, that when you put an empty section in between two partly filled, the bees will bulge the partly filled ones over into the empty one, if not prevented by separators. If I am correct, those who advocate no separators leave their crates on the hive till the sections are all completed, or nearly so. By tiering up this can be got along with very well, except that a section of honey looks nicer the day it is finished than it ever will again. Every day the bees travel over the white-capped surface, it is more or less soiled; and when that beautiful white appearance, so much admired in fresh comb honey, is gone, with most people the price must deteriorate. It is like the bloom on grapes—you can not well restore it.

In the face of these objections, however, the president and others produced comb honey that took the first premium at the different fairs, and used no separators. One member present, whose name I have forgotten, said that he made sections of honey answer the same purpose as separators, by having one with at least one side capped over on each side of every empty section; that is, when he takes out a filled one, and puts an empty one in its place, he transposes them so as to get them as above. President Hutchinson recommends that sections be not more than 14 inches in width, and that they be filled full of fdn., and not to give the bees too much room at once, when you wish to dispense with separators. Thinner combs are sealed over sooner than thicker ones, as less time is needed to evaporate the honey to the proper consistency.

POLLEN AND DYSENTERY.

Considerable time was spent on the above subject, although the matter has been much talked about for more than ten years. When GLEANINGS first started, or even before that time, I gave reports in regard to experiments with bees wintered on combs containing absolutely no pollen, and the result then given was, that when wintered thus they were generally if not invariably free from some of the worst features of the bee-disease generally termed dysentery.

AN IMPROVEMENT SUGGESTED ON OUR BEE-HIVE TENT.

One of the friends mentioned that a suitable-sized hole in the top of the tent would allow the bees that collect inside to get out at their pleasure, but robbers would never find their way in. I am inclined to think this would generally prove true, and we shall make some experiments in regard to it as soon as bees fly again. One friend asked what would become of young bees that escape in this way, were a tent spread over some cases of honey, for instance, the honey being just removed from the hives. The general impression seemed to be they would be lost. But I suggested calling them together by a spare queen that might not be of any particular use otherwise.

ARE TWO ENTRANCES ADVISABLE?

The general impression seemed to be they were not, and reasons were given why they were not advisable.

WHEN TO PUT ON THE SECTIONS OVER A COLONY.

Dr. Whiting advised waiting until white fins of comb were beginning to show on top of the frames over the cluster.

TIERING UP CRATES OF SECTIONS.

When a crate of sections is partly finished it is quite customary to raise it up and put the case of filled empty sections right under it. Where the colony is strong, the bees often fill the two cases, and sometimes even three. Well, by the usual process of tiering up, the bees are constantly walking over the tops of the sections, between the two crates of sections, and they thus have an opportunity to propolize the tops of the new set, as well as the bottoms of the old one. Many of the friends thought this not objectionable; but it seems to me it would be in our locality. With wide frames there is no space at all for the bees to pass between the upper and lower tier of sections.

DOES THE CRATE OF SECTIONS NEED AN OUTER COVERING OR CAP?

Secretary Cutting thinks it does, and my experiments have satisfied me that in our locality we want an outer covering. President Hutchinson thinks, however, that many times the bees are too hot within, and that the outer case would be like an overcoat in the summer time. Mr. J. H. Robertson, who has used the Heddon case largely, also agrees with the president, that no outer covering is needed. The point is, do we or do we not want the sun during hot days in summer, and the wind during cool nights or days which also occur sometimes in summer,

to strike directly on the crate that holds our sections? Some years ago I decided that we want protection, because without it I find the bees would not work well on the outside sections; but after a protection in the shape of an outer case was furnished them, they went right into the outside sections and filled them almost as quickly as the inside ones. This matter needs a careful looking-into.

MAKING FOUNDATION STICK TO SECTIONS.

When using the Parker fastener, or other similar devices, several of the friends have had trouble from the fdn. dropping off; but the general conclusion seemed to be that it was because the sections were not dried in the sun, or near a stove, before putting in the fdn.

PUBLISHING STATEMENTS IN THE BEE-JOURNALS, THAT SEEM TO HAVE THE STAMP OF MISTAKE OR FALLACY ON THE FACE OF THEM.

Prof. Cook gave us an excellent essay, where he good-naturedly rebuked quite a number of the brethren. He thinks the papers which have been published in regard to the conversion of worker-eggs into drone-eggs, by the bees; also getting queens that lay worker-eggs, without ever having met a drone, etc., should never have appeared in print. I thought so for a good while, and kept the letter on the latter subject for six months before I published it. Now, I am not yet satisfied that this thing is a mistake or a fallacy; but even if it is, it seems to me it has had the effect of bringing out a good many facts. I have sometimes thought that it is a good plan to make the brethren defend their positions, and the most that we accomplish in bee culture, or any thing else, is by a multitude of testimonies and experiences. It is, however, quite true that we may carry things too great a length, and I thank friend Cook for his timely caution.

CARNIOLAN BEES.

A letter was read from A. J. King, of the *Bee-Keepers' Magazine*, and from Mr. Shuck, of Iowa, extolling the above bees quite highly.

Concluded in our next.

MY REPORT FOR 1884.

SHALL WE THROW AWAY OUR ODD-SIZED HIVES, AND GET NEW ONES ALL UNIFORM, ETC.?

THANK you for publishing my article in Oct. GLEANINGS, even if you did take the head off the thing. You are quite a hand to decapitate and curtail; and although I do not always quite like it, it may be that my articles are often like a snake—better without a head; or like a hornet—better without a tail. In answer to your criticisms of my article (page 663, Oct. GLEANINGS), I would say: My idea is, that when one has the stock on hand of hives, honey-boxes, etc., it is better to utilize them, even at some inconvenience, than to throw them away. When one is buying, or making and building up in movable-comb hives, he should by all means have them all alike.

I have tried this diversity of frames a little; not much, but enough to become thoroughly disgusted with it. But when a stock is doing well in odd-sized frame or box hives it is better to leave them alone until for some reason it becomes necessary to manipulate them. Before you go to the expense of money, time, and waste, be sure that the gain will overbalance the loss. The cost in such cases generally exceeds the estimate.

I did not advise investing in bulk honey-boxes. I said, use what you have rather than throw them away. It might, indeed, be well to cut the honey out of newly filled frames when customers bring vessels to your house to be filled. But when the producer must furnish them, 5-lb. boxes are themselves such splendid vessels that I actually bought some this year, and expect to make them pay well.

ROOT'S PRICE LISTS

Are a great boon and a great temptation to a fellow. It contains much valuable information for the novice, and catalogues almost every thing an apiarist can want. But, just what to get is the problem. There are so many little notions it would be so nice to have, and at low cost too; but, cheap as they are, if one attempts to get them all he may suddenly find himself minus a certain article *more* essential than all. I have had to revise an order several times after counting up the bill. Not every *handy* article is a *necessary* one.

MY REPORT FOR 1884.

Bees did very little in this locality this year. Nobody obtained much honey, and some got none. My bees came through winter mainly in good condition. Gooseberries bloomed as usual about April 25th, and for about a week furnished some honey. Peaches did not bloom, and neither apple blossoms nor dandelions yielded much. White-clover heads make their appearance about May 20th, but it is two or three weeks later before bees begin to accomplish much. My bees were in fair condition to reap this harvest, the Italians and hybrids much in advance of the blacks. The first swarm issued June 5th, and one colony went to work in sections at the same time. In the next month they gathered their honey and did their swarming—more of the latter than of the former. The hybrids did the most of both. This swarming would not vex me so very much if they would not *hang* and “talk” about it so long before they get at it. After filling every thing below they would *hang* out in front, crawl half way up the sections, and *hang*; or some would build a little comb, then concluding, I suppose, they were not going to wear out their lives storing honey to leave with the youngsters at home, would stop work and hang to what they had built until they got ready to swarm. The only thing I could do was to swarm them myself; and that, it was not always expedient to do. Early in July, drought set in. Many of my new swarms were just getting to work, or ready to work. White clover bloomed in profusion during July. Subsequently we had a large crop of heart's-ease, and I never saw more Spanish-needle blossoms in my life. Yet after July 4th my bees did not store 10 lbs. of comb honey. This in spite of the fact that we had good weather with some refreshing rains in August and September. Now, what was the reason? I never saw so many grasshoppers, crickets, etc., in my life. When crossing a meadow there would be a perpetual cloud of these skippers in front of me. Is it possible that these bugs caused to any extent

this scarcity of honey? I was not bothered with honey-dew.

The aggregate result of the year's work is an increase from 39 to 63 stands, which I reduced to 50; about 10 lbs. of comb honey per stand, spring count, and about 180 lbs. extracted honey. As a rule I have obtained a little better price this year than last. Sixteen cents per pound is the price I got in Springfield. A very poor season altogether.

HOW I TELL WHEN SECTIONS ARE FILLED.

Simply look and see. I use the L. hive. The cap rests on cleats nailed on to the sides and ends of the brood-chamber. I fix the rack, cases, or frames, as the case may be, on top of the brood-chamber, and put glass on one or both sides of the section arrangement. I have nothing to do then but lift off the cap and look. No surplus arrangement is satisfactory to me without this feature. You can tell when sections are about full, by the editor's method (page 664), but not when sealed over. I write this for the benefit of W. Connally.

WHAT TO DO WITH UNFINISHED SECTIONS.

I have tried to get sections filled by feeding honey, but have not yet been able to make it pay. I can make the unfinished sections pay for themselves much better. There is money in them, if we do have to wait some time before we realize it. They are the cheapest and handiest bee-feeders I have yet seen. We have only to set the box on the alighting-board, or in the upper story, and the thing is done. And these empty boxes of comb are splendid to tempt bees up into surplus boxes early in the season. I am willing to have a thousand of them to hold over till spring.

Is chaff in cushions, which has become moldy, as good an absorbent of moisture, and non-conductor of heat, as that which is fresh? Should chaff in such cushions be renewed every year?

A grocer in Springfield tells me that California honey always brings a higher price in the market than any other. Is that so? GEO. F. ROBBINS.

Mechanicsburg, Illinois.

I suppose, friend R., this matter of throwing away our old hives depends considerably on what we are going to do with bees. If one is going to rear queens, and work for extracted honey, I would transfer my bees from the old hives at once, as soon as the weather was suitable; but if you were going to work for comb honey, you can, without very much expense, arrange almost any hive so as to take one of your regular cases, and then practice tiering up.—I know our price list is voluminous, and I have several times not only threatened but attempted to cut it down by the omission of some article not much called for; but almost invariably there comes a wailing note from some brother who looked there for just that thing or that arrangement above all others, and eventually I decided to put it back in the list again, as the lesser of two evils. Another thing, when I take something out of the price list not very much used, somebody keeps inventing it, and writing us letters with diagrams and long explanations. Now, you see by keeping the price list thus voluminous it prevents the friends from wasting time on something that has already been long in the market. In this way it makes a sort of cyclopedia, as it were, of devices and implements that have from time

to time been found useful in the care of bees. Since I have been interested in poultry I have looked in vain for a complete list of the implements used by poultry-breeders. Each one seems to go on his own hook, knowing nothing about what handy fixings his brothers may have. Another thing, no one makes it a business of making by nice machinery, at a small price, things that are now made laboriously at home. I have looked the poultry-books and poultry-papers over to find a convenient hen's-nest, and can not find any sort of one advertised. Now, some man with a factory might get up a movable nest having all needful good qualities, and, in fact, he might spend a year or two investigating all the nests in use, and he would then be better prepared than any single individual to make what is wanted; and with proper machinery he could furnish them at one-fourth of what it will cost an average day laborer to make his own. Now, if I am behind the times in this matter I hope some brother will straighten me out. A very cheap and simple nest could be made for a man of small means, and an elaborate, fancy one for those having fine expensive residences.—Your ideas are good on unfinished sections, friend R.; but is not nice white honey, clover and linden, for instance, rather expensive feed compared with the present price of sugar?—I would not have moldy chaff cushions at all. If they get damp, lay them on top of the hive till they get thoroughly dried out.—California honey will often bring a higher price than clover and linden, when first introduced; that is, where it is a novelty; but after a while I think the preference will be given to a nice article of clover honey, although much would depend, probably, on the quality of the California honey.

FIXING A SMOKER SO IT WILL HANG ON THE EDGE OF THE HIVE.

A SUGGESTED IMPROVEMENT BY FRIEND EAST-
TERDAY.

I THINK I have made an improvement in your Clark's smoker, which very much increases its usefulness. This improvement consists in so arranging it that it can hang on the upper edge of the hive, with its nozzle pointing toward the top of the frames. I have used one of a different kind for several years, which could be used in this way, and I found it to be of great advantage; especially was this so when handling cross bees, as I could drive them back at the first sign of danger by simply touching the bellows, without moving the smoker; whereas if I had been compelled to pick the smoker off the ground, the bees would have "got there" first.

This is the way I fix the Clark smoker: I rivet a small catch, or hook, to the lower side of the nozzle, close to the end. Then I take a piece of stout wire, about the size used for bucket-bails, 10½ inches long; 4 inches from each end I bend it at right angles, somewhat in the shape of the letter 'C'; then 2 inches from the ends bend again in such a manner that when the ends are fastened to the edges of one of the bellows-boards the loop will stand down at nearly right angles to the bottom of the bellows. This loop is to bear against the side of the hive, while the

hook catches over the top of the side (or end) board of the hive. The wire is fastened to the edges of the upper board of the bellows, with wire staples, or it can be fastened on top of the board in the same manner. By fastening it to the upper board, the smoker will remain stationary while the bellows is being worked.

It would make a better job, not to bend the wire the last time, but let the ends extend up past the end of the bellows, and fasten them to the sides of the cone; but they would have to be riveted on, which would be more difficult to do.

Nokomis, Ills., Jan., 1885. E. S. EASTERDAY.

Doubtless many would like the arrangement, friend E.; but I usually lay the smoker across the corner of the hive in such a way that it rests on the bellows, in the manner it appears in the price list. By simply touching the bellows, and pressing down a little, a puff of smoke will immediately be sent across the frames. There is one objection to this, however, for we may puff sparks among the bees unless the smoker is first shaken a little. The sparks and ashes should be blown out before the blast is turned toward the bee-hive.

CARP AND CARP-PONDS.

SEVERAL QUESTIONS ANSWERED, IN REGARD TO THE INDUSTRY.

SINCE the appearance of my article on the construction of carp-ponds, in GLEANINGS of Dec. 15, 1884, I have received several inquiries relative to this subject and carp culture in general. As I stated in my article, "My knowledge of the subject is based upon my experience in constructing my pond, and upon investigation, etc." Believe me, my experience goes but little further than in the construction of my pond, which was done last fall. It was not my intention to mislead any into the belief that I had an extended experience.

The subject is one in which I have been deeply interested for some time. I might lay claim to more experience than simply that derived from the construction of a pond, as my father-in-law has been engaged in carp culture for several years (since 1881), and is an enthusiast on the subject. Having paid frequent visits to his ponds I have had opportunity of learning something of the business. However, some questions have been propounded to me by my correspondents that I do not feel qualified to answer, much as I desire to assist those thinking of engaging in carp culture. This industry is comparatively new in this country, and there is much concerning it that is yet to be learned. Doubtless many things now considered as facts will be proven to be erroneous. With these points in view I feel that I ought to be careful that I do not so write as to mislead. That which I do not feel I know to be a certainty, I prefer to express merely as an opinion, based upon the best information on the subject at hand.

And now, Mr. Editor, with your consent I will introduce some of the questions that have been propounded to me, with the best answers I can give. I hope that any of your readers who may hold different opinions from myself will be free in expressing them.

"Can carp-ponds be successfully supplied with water drawn from a well by a wind-mill?"

I have never heard of such a case; though, with a well affording a large supply it might be successfully done.

"Will 'hard water' answer?"

Rather think there would be no objection to hard water. Very few springs afford "soft water."

"Do you think it will pay to raise carp for sale for food?"

I do. After you get your ponds, and get them stocked, there is but little after-expense. A neighbor remarked, a few days ago, that he believed there was nothing one could go at in which there was more money to be made. The question of over-production is the only one, I think, that can interfere with the business; and when we consider how few, comparatively, have locations suitable for carp-ponds, this objection seems to be removed.

"What varieties of carp are best?"

This is an open question. I have been told that only full-scale carp should be bred. Again, Milton P. Pierce, secretary of the "American Carp-Cultural Association," says, "All full-scale carp in this country are impure, inferior, and not worth breeding." The same authority mentions the parti-scale type of carp as being the best now obtainable.

"Have you 'carp for sale'?"

No.

"At what price do carp sell?"

I quote prices adopted by the Carp Association, above mentioned, at its meeting of Sept. 17 and 18, 1884, which is as follows:—

Young parti-scale carp, this season's hatch,
 Yearlings, " \$8.00 per 50, and \$15.00 per 100
 Breeders, " " each, 30c
 " \$1.00

"How many carp will do well in your pond?" (size 30 x 120 ft.)

I expect to introduce 50 in the spring, but suspect they will be somewhat crowded when they attain a larger growth.

"Do fish have to be fed regularly?"

Having abundant room, they do not. They doubtless do better by feeding, and there are few who will neglect this duty, if it is only for the pleasure of seeing them eat, as well as getting them gentle. It is said they thrive on cooked potatoes, bread, kitchen slops, etc.

Every one who expects to follow breeding carp to any great extent should have more than one pond. The "small fry" become so numerous that the larger ones do not do so well.

I would call attention to the American Carp-Cultural Association, above mentioned. The office is No. 323 Walnut St., Philadelphia, Pa. The association issues a circular, setting forth its objects, which will, I presume, be mailed on application to the secretary, Mr. Milton P. Pierce, at the above address. JOHN E. EVES.

Mooresville, Ind., Jan. 12, 1885.

Thank you, friend E. I would suggest that the prices you give are considerably higher than are asked by the friends generally who have received carp from the Government. I hope the Carp-Cultural Association will soon have a text-book out at a moderate price. While GLEANINGS always expects to be able to notice new kindred industries as they come up, we shall have to remember that it is primarily a bee-journal; and doubtless many of the articles we are

publishing could either be abbreviated or omitted, had we a text-book giving the facts contained in them. I am now engaged in writing a series of articles on bee culture that we expect to publish in a pamphlet for our ten-cent Industrial Library, and my convictions are that we want a book on carp culture that will cost just about this sum. Many of us enjoy reading a brief treatise on these new things, say about such a book as ten cents ought to pay for, where we could not possibly find time to go over an elaborate treatise. Am I not right? The books we advertise on squashes, cabbages, mango-wurtzels, and onions, are sold in great numbers; and as one can go through a book in an evening or two, he generally reads it through when he takes it up; but only the specialist can afford to go through an elaborate treatise.

CARP CULTURE, AND THE CONSTRUCTION OF CARP-PONDS.

KEEPING CARP OVER WINTER IN A TANK IN THE CELLAR.

ABOUT 300 feet south of my house I have a fine spring which made a wet swampy place below it about 100 feet square. Three years ago last summer, which was an extremely dry season here, myself and hired man plowed and scooped, and hauled out with a wagon about two weeks, and made a pond that was nearly in a circle, 60 feet in diameter; and when filled (which was not until New Year's) there was from one to four feet of water in depth. I received and put in my pond, Dec. 29, 1881, 16 German carp, about three inches in length, sent me by the U. S. Fish Commissioner. The last of the next February we found 3 that had died and floated out to the edge. They were about the same size as when put in. We watched very anxiously and frequently through the spring and summer months for a glimpse of them; but only one did we get to see, and then only long enough to be sure it was a fish.

On the 30th of the following August we found 3 that had died and floated to the edge, that astonished the neighborhood. Two of them measured 14 inches in length, and weighed $2\frac{1}{4}$ lbs. apiece; the other was 15 inches long and 12 inches in circumference, and weighed $2\frac{1}{2}$ lbs. We spent half a day in hauling them around and exhibiting them. Several of the neighbors that saw them could not believe they were the same fish put in about 8 months before, and only 3 inches in length. The next day we found three more about the same size. I wrote to the U. S. Fish Commissioner, and told him how I had found my fish, and gave him a description of my pond and the water, also the growth the fish had made, and asked for all the information he could give me, and asked if he could furnish more fish, as I was not willing to give it up that way. I received a card from him, stating my order should be renewed, but nothing more.

On the 24th of November, 1882, I received 22, from one to three inches in length, which were immediately turned into the pond, and they did not make their appearance again until July, 1883, and were fully 12 inches long. After that time they would come up and get bread on the water whenever the

weather was pleasant, until late in the fall, but did not raise any small ones that season.

Last spring, about the middle of April, they made their appearance again. They had not made much growth since the fall before. We had many friends come to see them, and they got fed frequently. On the 27th of July, when our little fish first made their appearance, the old ones looked as if they would measure from 20 to 24 inches in length, and were about the shape of the white fish we get from the lakes. Since the small ones made their appearance we have seen the larger ones but a few times. The little ones were from one to three inches in length when first seen. They have been well treated. A great many come to see them, and they always had to have a few slices of bread, which made them show to the best advantage. My wife sometimes said I would need another baker. We sometimes fed at three different places at the same time, and there would be a space three or four feet square at each place where they were pushing and crowding each other to get the bread. They would eat bread from my hand when held in the water, and often nibble my fingers. Sometimes I would get my hand under one and throw it out on the bank. The largest size of the small ones is from 10 to 12 inches in length. I have not seen them since Dec. 1.

Since losing our fish I have read an account given by a man in Germany, stating that he had known heavy loss from a stroke of lightning; and knowing that we had a heavy storm a few days previous to finding ours, we have concluded that was what killed our fish.

About the first of last November I built another pond just below the first one, which is about 100 ft. wide by 150 long. I laid a five-inch pipe at the lowest point, and built the embankment over it so that I can let the water out when I wish. I also made a box 2 feet square over the upper end of pipe for a strainer, by setting four posts 2 feet apart and 2 feet high, and nailing strips, 1 by 3 inches, $\frac{1}{4}$ inch apart, around and over it. I also made what is called a collector, still above the strainer, in the form of an A, and attached them together. The wings were 16 ft. long and 15 inches high, 14 feet wide at upper end, and same height as sides, and I put a floor in it. The boards run crosswise under the sides, and project one foot on each side. I then filled dirt on them, up to within four or five inches of the top of sides, to hold it down. The bottom of the collector was just high enough so the water would all run out through the pipe. I intend to let the water out of my first pond early in the spring, and put my small fish in my new pond; and if I am successful the coming summer, I shall have a supply of both large and small ones by the end of the season.

I have a neighbor, $2\frac{1}{2}$ miles from me, who has four ponds. He received fish from Washington when I received my first lot. I have been there to see him draw the water from one of his ponds twice—the 22d of last March, and the 11th of last November. The pond covers about half an acre. Last March there were about 500 fish in it that would weigh from 2 to 3 lbs. each, and they estimated the small ones at 5000, from 2 to 8 inches in length. The same pond had about half as many in November. He sold a great many for stocking ponds. He also made a place in his cellar, 13 feet long, 10 feet wide, and 20 inches in depth, which he cemented, and has a pipe running from his pump to it, so he can supply them with fresh water whenever needed. He

informed me a few days ago, that he had about 300 in there of different sizes, mostly small ones, put in about the 1st of Dec., and they were doing finely.

I see that I have forgotten to state that I enlarged my first pond in the fall of 1882, until it measured 110 feet in diameter.

W. H. CARPENTER.

Springboro, Warren Co., O., Jan. 12, 1885.

Thanks, friend C., for the valuable information you give us in regard to this new industry. One of our friends has sent us a book by Milton P. Pierce, of Philadelphia, fully describing the plan of making the collector you mention, and also some excellent ideas in regard to the construction of the outlet. There are some good things in the book, but it is a very small pamphlet, and the price is \$1.00. It seems to me too bad that we can not have a nice little book on this new industry for about 25 cts., or possibly a little more. I think the Government should see to it that some text-book like the above be furnished at a moderate price to those who receive fish. The valuable letters given through GLEANINGS would make quite a valuable little book; and if somebody else does not get at it, I do not know but I shall have to undertake the task myself. Perhaps the book could be boiled down so as to come within the scope of our ten-cent Industrial Library.

ALLEY'S DRONE-TRAP.

A PROTEST AGAINST THAT UNFAVORABLE REPORT.

W. FRANCES, in GLEANINGS, JUNE, 1884, says: "I set the trap before a stand of bees. They could pass out and in when so minded; but, about one-third of them, after making a trial, became united and went to other stands, and in less than a minute got up a fight. After making three or four such trials, I laid aside the trap."

Now, friend Root, you say the above is "not very favorable." But, what are we to understand from what friend F. has said, that he attempted to do by using the drone-trap? Did he place it on the hive to prevent swarming, or to assist him in case a swarm issued? I can not make out wherein the trap was a failure, or even had any thing to do with the bees going into other hives. Certainly, it was a very unnatural and unusual proceeding. If the bees, on attempting to swarm, went into the air, and, missing their queen, attempted to return, why did not friend F. say so? Why didn't he tell us whether the queen went into the trap or not, and, in fact, give us more of the particulars? It seems to me that his young bees were out on a "sporting flight," and, his hives being too near together, and the weather somewhat cool, they might have got confused, hence the trouble and failure. If the trap was placed there to prevent swarming, it should have been removed when it was evident that they would return to the hive, so that they could pass in.

It strikes me, that when such a thing occurred several times, I should have removed the trap, as an experiment, to see whether the trouble was cured by it or not. Now, had friend F. wanted his bees to swarm, why did he not remove the trap while the bees were on the wing, and place it near the spot where the bees were hovering, or perhaps settling?

Had he done so, they would have settled upon it; that is, providing the queen was in it, and then he could have hived them at pleasure. If he did not care to have the bees swarm, why not, when he was there to witness the operation, remove the trap, and, when the bees had gone in, released the queen. As you suggested, his hives must have been very near together, or such an occurrence would not have taken place.

Directions for using the trap were published in the *American Bee Journal*, and I am quite sure that friend F. had not read them, or he would never have had occasion to make such a report. The 3d edition of my book is in preparation, and I will endeavor to give such directions for using the trap as will prevent other unfavorable reports of it.

I append the report of one man who read the *A. B. J.*, and you can see how he managed. It is evident that friend F. did not understand how to use it. The trap in this case worked just as I intended, with the exception of the bees going into other hives, which I am quite sure they will seldom do in such cases.

As to the unfavorable reports, I can say that all the best hives, and, in fact, every thing we have in the "bee line," have had unfavorable reports made of them. But when people are taught how to use them, favorable reports will be made in all cases.

H. ALLEY:—I had a colony that swarmed, and the trap did its work beautifully. I am highly delighted at being so successful at my first attempt. The bees went off for a short time; but when they found their queen was not with them, they returned, and covered the whole front of the hive. I removed the parent colony back, and placed a new hive filled with foundation on the old stand and let the bees go in, releasing the queen from the trap at the same time.

B. F. NEWCOMB.

100 Washington St., Chicago, Ill.

Wenham, Mass., Jan. 16, 1885.

H. ALLEY.

But, friend Alley, it seems to me the directions for using the trap should be sent with each one. It is always customary to furnish printed directions, free of charge, with the article itself, if there is any danger of not being able to use it properly. Even though the directions have been given a good many times in the journals, to make a sure thing of it a copy had better be pasted directly on the implement. Printed directions cost only a few cents per hundred, when we buy them by the thousand.

FROM 23 TO 52, AND 2000 LBS. OF HONEY.

A REPORT FROM THE HEDDON STRAIN OF BEES, AND SOME OTHER MATTERS.

I COMMENCED the season with 23 colonies, which have done exceedingly well, considering the season. The bees did well on white clover, but at no time was the flow of nectar rapid. Basswood was of short duration, not lasting over a week. This closed our honey season, as the fall blossoms were a failure. I kept 15 stands for honey, and the remainder for increase and raising queens. During the season the number of stands was increased to 52, and from them 2000 pounds of extracted and comb honey obtained.

My bees are Italians and hybrids, of James Heddon's and Oliver Foster's stock, with which I am well pleased. Those obtained of James Heddon are

a dark leather color, and are a very active, hardy bee, wintering well, as they seem to bear confinement in the cellar in winter better than others. Those received from Oliver Foster are lighter colored, one queen being a beautiful, bright golden color. Some of the workers have four distinct bands. In one hive of the Foster stock the drones were the most beautiful I ever saw. By crossing these two kinds I expect to make a great improvement, as each kind has marked qualities.

I winter my bees partly in the cellar and partly on their summer stands. Those on the summer stands are wintered something on the principle of the chaff-tenement hive. The difference is, that I use the Langstroth hive, placing two facing to the north and two to the south. Then I make an outside box to go over the four, with four inches of space between the hives and the packing-box, which is to be filled with chaff. The packing-box is made high enough to cover a two-story hive, the bees being wintered in the upper story. A slat honey-board is placed between the two stories, which gives the bees a chance to poke the dead bees down below. An entrance is made by boring a hole in the packing-box and the front of the hive, and connecting the two with a tin or wooden tube. The lid is made with a gable roof; and, as the material used need be of only half-inch stuff, and of a cheap grade, the cost does not exceed 20 cents a hive, which is a great saving, considering what a single hive will cost when chaff packed. This plan may not be new to many of the readers; but as I have not seen any thing like it described in the bee-journals it may be of interest to some.

In an experience of seven years in bee-keeping I have met with many difficulties; but by reading books and journals of apiculture, a great many of them have been overcome. W. S. DORMAN.

Mechanicsville, Iowa, Jan. 12, 1885.

HOW TO USE EMPTY COMBS.

HOW TO MANAGE SO AS TO HAVE THE HONEY GO INTO THE SECTION BOXES INSTEAD OF INTO THE BROOD-FRAMES.

IN last number of GLEANINGS I gave you, by way of explanation, some comments on friend Hutchinson's article found on page 803, for 1884, but for lack of space did not say all I desired to. The main point in that article which I wished to speak of was, what caused the apparent failure of Mr. Hutchinson in using empty combs in the brood-chamber, while working for comb honey with newly hived swarms. Friend H. says, "I abandoned hiving upon empty combs, as the bees would fill the combs with honey in a few days—fill them so full that the queen found but little room to lay, then they 'loafed' a long time before commencing work in the sections; and when they did finally begin it was in a slow, easy sort of way."

Now, inasmuch as I always, of late years, have new swarms on empty combs, and that with good results, it becomes evident that there must be a right and a wrong way to use empty combs, when working for comb honey with new swarms. As I have stated before, the queen going with a swarm is not in a condition for rapid egg-laying until the swarm has been hived long enough for the bees to get under full headway building comb; hence if a full hive of empty comb is given such a swarm, the

first thing the bees will do is to fill it with honey, no matter how few or how many sections are given, for the bees have room in this brood-chamber for all of their immediate wants. If we extract from these combs we do not materially help matters, except to give a little more room to the queen; for after extracting, the first instinct of the bees is to fill those empty cells again, instead of leaving an empty lot of comb in the brood-chamber, to go to work in the sections. Thus we get only a little extracted honey for our trouble, while two such extractings will effectually exclude all honey from the sections; while not to extract is nearly as bad, for after once filling the combs in the brood-chamber with sealed honey instead of brood, the bees are always loth to enter the sections, for the reason I first gave, which is, that they feel that all their wants are well supplied. Now the trouble was with friend H. in giving the bees too many combs. By so doing the bees found room to occupy all their forces; while if only one-half or one-third as many had been given, the bees not being able to cluster and work on these combs, would have immediately gone into the sections, and gone to work on them. Having thus at once started in the sections, the little honey stored in the few combs below will be carried to the sections as fast as the queen needs room for egg-laying, and the result with me is, that at the end of 15 days from the time of hiving, the sections are well filled with honey, and the combs below a solid mass of brood, except a little pollen and honey in the extreme upper corners of the frames. The object should be in all cases, whether you use combs, frames of foundation, or empty frames, to get the bees at work in the sections immediately upon being hived. I use six Gallup frames of comb (equal to 5 L. frames) for the very largest swarms, while others have but 4 or 5, according to the size of the swarm to be hived, and in this way I always secure good results. The greatest secret of getting comb honey is to get the sections just as near to the brood as possible; and any plan which allows of one or more inches of sealed honey between the brood and sections is certainly defective. By hiving swarms on empty frames with sections filled with foundation, friend H. placed his bees in the right position to comply with the above secret, while with the hive full of empty comb the condition was exactly the reverse.

One other thing: While it is necessary, almost, to furnish a full sheet of foundation for every section when a swarm is hived, as H. recommends, such foundation is often nearly as good as thrown away while working on my plan, for I have repeatedly had sections filled and completed which contained only a small starter of natural comb, as quick as those filled with foundation standing by their side, while an examination of these latter sections showed that said foundation had not been touched, except as the bees added their wax to it. Now, why is this? The reason is very simple. All new swarms of bees have been preparing, for a week previous to the time of issuing, for the construction of combs in their new homes, and for this reason we often see little bits of wax, from the size of a pinhead and upward, attached in many places to the limb of the tree they have clustered on, if they stay clustered for five minutes or more. This wax being secreted, must be used somewhere or wasted. In friend Hutchinson's case it is used in building comb down in the brood-chamber, while the bees

are drawing out the foundation in the sections; while in my case it is used in filling the sections with beautiful combs, as they have no need for it below. From the above it will be seen that the reason friend H. and myself did not agree regarding empty combs was, that we did not manage alike, and I suspect that the different modes of management is what causes the "bee-doctors" to so often disagree.

Brethren, let us use more charity one for the other, for the different mode of management will almost always explain all differences of opinion.

Borodino, N. Y.

G. M. DOOLITTLE.

Friend D., I want to add emphasis to your concluding sentence. Your above paper makes it very clear why bee-keepers may obtain such opposite results when only a little variation is made in the method of management. You run very close in one place to this new subject of reversible frames; and if I am correct you have not given an opinion in the matter as yet, and, if I am not mistaken, it will be just like you to say you don't want any reversible frames around, for the reason, perhaps, that you accomplish about the same results without them that others would obtain with them.—I want to take out one of your sentences, and call attention to it: "Any plan which allows of one or more inches of sealed honey between the brood and sections is certainly defective." That is the sentiment exactly. I should want the best way to obviate such a result.

INTERNATIONAL BEE-KEEPERS' CONVENTION

At the Exposition in New Orleans, Feb. 24, 25, and 26, 1885.

SOME SUGGESTIONS TO THE BEE-KEEPERS IN REGARD TO GETTING THERE.

IN my letter to you of December 25, I tried to make every thing plain; but there seems to be a misunderstanding regarding the sleeping-car and passage-tickets. For the benefit of your readers I would say, it requires a ticket for passage, independent of the sleeping-car arrangements, and the sleeping-car rates quoted you were for one way only, and it would cost you just double the amount for the round trip that it would for one way. The Sleeping-car Co. is separate from the railroad company, but they are each necessary to the other. The railroad fare, Cincinnati to New Orleans and return, good for 15 days, is \$18.00; from Cleveland to New Orleans and return, good for 20 days, is \$25.25, and the same from Medina; and the rates from all parts of the United States and Canada are in the same proportion, and it will save them all money to purchase their tickets to New Orleans and return of their nearest coupon-ticket agent. To prevent any mistakes regarding the route, say to the ticket agent you want to go via the Louisville & Nashville Railroad from Cincinnati or Louisville, according to the section of country they are starting from; and a good plan for each one is to read his ticket carefully, and see that one coupon reads Louisville & Nashville Railroad, from Cincinnati or from Louisville, to New Orleans. As Thursday, February 19, is a good time to leave Cincinnati, I would suggest that you set that day for all those

desiring to accompany you to New Orleans to leave their homes so as to reach Cincinnati Thursday, the 19th, and leave there at 8:55 P. M., and arrive in New Orleans Saturday morning; then you have plenty of time to get located, and be ready for the convention on the following Tuesday. For those going on the above date, and desiring sleeping-car accommodations, it will be necessary for them to send you their names not later than February 12th, so the necessary arrangements can be made with the Pullman Sleeping-car Co. HERMAN HOLMES,
Traveling Passenger Agent.

Medina, Ohio, Jan. 17, 1885.

MEETING OF BEE-KEEPERS AT THE EXPOSITION IN NEW ORLEANS.

Your idea in regard to wearing badges, I think a capital one. You may count me one on your list of those who expect to attend the exposition in Feb. Hope to meet you and other bee-friends. This is the first friendly letter I have ever written you, but expect to let you hear from me oftener in the future. I have about 150 stands of bees. My crop of honey was short last season.

Of course, if the plan of wearing badges is adopted I shall wear one. Good old GLEANINGS is a welcome visitor. J. M. FORREST.

Midway, Texas, Jan. 10, 1885.

A BADGE FOR BEE-KEEPERS.

I for one object to a badge. Could you not design a small (say life size) gold or rolled gold bee or queen, which could be attached to the cravat or coat-collar? I think this would not be too conspicuous, and no bee-keeper would object to wearing one. I will take one or two at once; and if you have any made, mail me one. What do you say?

Bayou Goula, La., Jan. 10, 1885. P. L. VIALLO.

The subject was agitated some time ago, friend V. A golden queen-bee would cost quite a little money, but perhaps good plated ones might be afforded at a tolerably fair price. The only objection that I know of is on the ground of expense, and a good many of the brethren are already indulging in more extravagances than they can well afford. I do not quite like the idea of wearing a badge in public, but yet there are so many reasons why bee-keepers should know and recognize each other at a glance that I have a kind of feeling that it is the thing to do. Friend Newman, of the *A. B. J.*, has for sale some very pretty badges; but perhaps it would be a good idea to have one especially for the exposition at New Orleans. Perhaps before this journal goes to press we may make arrangements in regard to it.

THE CONVENTION AT NEW ORLEANS.

I notice in GLEANINGS of Jan. 1, your suggestions in relation to attending the convention in New Orleans. I shall be very happy to be one of the number of bee-keepers to attend, as suggested by you. Will you be kind enough to inform me what arrangements, if any, have been made in relation to the matter? Does the \$130 named by Mr. Holmes, as the sum for which a car can be chartered from Cincinnati to New Orleans, mean for the round trip?

S. P. WEAVER.

Leipsic, Ohio, Jan. 14, 1885.

Mr. Holmes, in the paper at the head of this, answers your question, friend W.

BADGES FOR THE EXPOSITION.

Your suggestion, that all the bee-men wear badges, and meet in Cincinnati when they go to New Orleans, just suits me. I propose that you make the badges, and let us know in the next number what you can furnish them at. It will be much more pleasant when we go in the cars, looking for a seat, to sit down with a brother bee-keeper than a baker or a butcher.

JAS. P. SMITH.

Franconia, Minn., Jan. 12, 1885.

I agree with you, friend S. If it were not for looking too conspicuous, I should like the idea of having one's name on the badge. For instance, when we are looking about in a crowd, and a good many are talking, there probably would be hardly time to inquire of everybody who he was; but if by looking at his badge we could see something like this, "I am A. I. Root, of Medina, O., who are you?" wouldn't it help us to get acquainted? I for one find it extremely difficult to remember friends I have been introduced to and talked with, and once or twice I have found myself shaking hands with one I had shaken hands with but a short time before. I do not suppose it did any harm, but may be some of the brethren might think I was a little eccentric or queer, and I for one don't want to be thought queer. I want to make my life count just as much as it possibly can for the Master, and therefore I want my influence to weigh every ounce it possibly can be made to. If having my name and residence on my badge would help me to help somebody else, I am willing to do it, whether it makes people stare or not; but if it should have the effect of making me look queer and singular, and thereby lessening the weight of my influence, then I do not want to do it. May be somebody can help us right here. We shall be a band of brothers down there, gathered from far and wide, and we may ride miles side by side with somebody we wanted to see most, and not know it, unless some precaution be taken.

THE PIONEER APIARY OF BRITISH BURMAH.

MAKING THE BURMAH BEES ADOPT SIMPLICITY HIVES AND A B C MANAGEMENT.

FRIEND ROOT:—A B C has arrived, and so has another swarm of bees. The swarm I wrote of was driven off by ants. I got another swarm, and robbers drove them off. A B C arrived, and now we are prospering. I do not know that you will yet admit me to the A B C class, but I have almost got my lesson—in theory I mean—but have little of the practice as yet. If it takes as many swarms of bees to make an apiary as hills of corn to make a row, we have hardly an apiary yet; but when we have one I think we must call it the "Pioneer Apiary of Burmah," for I don't know that there ever was an apiary before in Burmah.

I have had my swarm nearly two months. I had a Simplicity hive, made by my Burman carpenter, as nearly like the pattern as I could get him to make it. He thought I was very particular, and I was obliged to undo his work several times before it was completed. In due time I got every thing ready, and "a few things more," as A B C directs,

opened the old box in which the bees were brought from the hills, and transferred. Half the bees left for the roof of the veranda, a lot clustered on the head of my Karen boy, and the rest were on the comb and in the hive. In short, we made the transfer in a bungling way; but as we had brood, the little folks concluded to stay with us, and the next day were at work.

As there is an abundance of pollen about, and very little honey, I fed them slowly with syrup; and as a result they are multiplying very rapidly. Saturday last I opened the hive and spaced the brood and gave them a new comb in the center of the brood-nest, and they seemed to be immensely tickled with it, and set about gathering pollen, etc., with new vigor. I measured the cells, and found just six and a half to the inch; so you see they are little fellows. Nellie thinks that these bees have read GLEANINGS and A B C, for they act in almost every thing just as A B C says they ought to. It is most laughable to see the young bees come in with their first loads. Altogether they have brought a very pleasant element of pleasure and recreation into our mission circle. The natives are greatly interested, and wonder that the bees are so gentle, and that we can make them mind. They are *very* gentle. I do not think they would have stung at all in transferring, if we had not used an old feather brush, to sweep them down from the roof into the hive. They didn't like that, and attacked it with great ferocity. Four shot by, and paid me their compliments.

I notice that these bees are most active after four o'clock P. M. Then they are very busy bringing in pollen. At noon not one is stirring. In the morning a few are flying. About 2 o'clock almost every day they fly out, to stretch themselves apparently. Whenever I lift the cloth over the frames they look up to see what is coming, but make no sign of coming out. They post no sentries, save just at evening, when a few come out and fan at the entrance, and make a show of fight to every bee that comes in. In a little while they return, and any strange bee could easily enter the hive. When we first got them they roamed the house over, alighting on our faces, and crawling over our persons. At first the timid took to the mosquito-curtains (I was far off at my office); but as it was soon apparent that they only wanted to get acquainted, they were not molested, and stung no one. So much for the "Pioneer Apiary of Burmah."

THE STING OF A SCORPION.

I see some one says in GLEANINGS that red onions are good for stings. The sting of a scorpion is the sting of hundreds of bees concentrated, and I have seen natives stung by a scorpion, writhe in pain on the ground, yet, in fifteen or twenty minutes, freed from pain by the application of the fresh surface of the small red onion. It is a specific with us, and the first and last resort. Ammonia, etc., will fail, but I have never known the onion to fail. I never tried it with bee-stings.

A. BRNKER.

Toungoo, British Burmah, Nov. 21, 1884.

Many thanks for your kind descriptive letter, friend B. I was especially interested in this matter of the sting of a scorpion. I have sometimes wondered whether this scorpion poison is any thing like a bee-sting. How does the scorpion introduce the poison? It is not a sting like a bee-sting, is it? In regard to onion juice, I should think likely it might "hit the spot" if any thing would. So you have yourself really been stung by a

scorpion, have you, friend B.?—I am glad to know that your little bees behave themselves in accordance with the rules laid down in the A B C book. Tell Nellie I think she must be right, and that the little bees have got hold of the ideas in the A B C and GLEANINGS, even if they have not really read them, only that they had these ideas before ever the A B C book did. You pay me a compliment, Nellie; don't you see it? God gave the bees this instinct, and the instinct away over in Burmah seems to be about the same as with the bees here; therefore when I devoted those weeks and months to studying the habits of these little friends, I mapped (unconsciously) just the way they would behave under special treatment over there. We should like to know how much honey you get.

COMPLICATIONS IN BUSINESS TRANSACTIONS.

HOW MUCH HONEY SHOULD NEIGHBOR S. GIVE FOR
II COLONIES OF BEES IN BOX HIVES?

A NEIGHBOR has eleven good swarms of bees in high box hives. He is sick of bees, and wants to know how much honey I will give him for them (the honey to come from next year's crop). As I use the Simplicity hive, I shall have to transfer them all, and work over the box hives into Simplicity hives. Now, how much honey can I give him per swarm? This is a fair honey section, but few bees kept here, all in box hives.

I am an A B C scholar, and practiced on three swarms last summer. I got 57 lbs. comb honey from a swarm put in June 12; 25 lbs. from each of two more put in June 26th and 28th, besides all are very heavy with honey for winter. I have them all in the cellar. JAY S. SEELY.

Sodus Point, Wayne Co., N. Y., Jan. 12, 1885.

Friend S., you will, if you take my advice, instead of saying *honey*, say *money*; and if you can possibly manage it, I would pay the cash down for the hives, and take them home. Trades and swaps like the above, or sometimes a great deal more complicated, have been the means of making more quarrels than almost any other one thing; whereas, had it been a simple purchase there would have been no room for misunderstanding and hard feelings. Almost every day I hear of some quarrels or jangles that come about by complicated business transactions, when it might just as well as not have been a simple purchase. Perhaps you have not got the money to pay. In that case, without knowing you or your neighbor, I should almost feel like saying, don't buy the bees until you have the means to pay cash down. If you want the bees very badly, you can rake and scrape up the money to pay for them in a few weeks, in all probability, before you will be ready to make any use of them. Probably you will get some honey from the bees next year, yet a good many bee-keepers carry eleven colonies or more through the whole season, without getting a pound of honey. I do not believe there is any need of so doing, in scarcely any locality, yet such things are reported, as you will see by Reports Discouraging. Now, if

you want to make the sale conditional, I would give your neighbor a note for the bees, something like this:

"Oct. 1, 1885.—I promise to pay John Smith \$30.00 for eleven swarms of bees now in my possession, providing I get honey enough from them to be worth the above sum. If I do not get the above amount of honey, what honey I do get I receive as pay for the care of the bees, and the bees are considered his property as in the start."

Now, even though the above is a pretty long lingo, there will be a good many chances for misunderstanding and hard feelings as it is. It is a fuss and bother too. Even if you get the agreement in black and white, sometimes so simple a thing as punctuation will leave a chance for a wrangle. I would not do it. Pay cash down for what you want to buy, or charge it on a book and show it to your neighbor, and ask him if the charge is right, or give him a note in the usual way. Jesus once said, "Let your communication be yea, yea; nay, nay; for whatsoever is more than these cometh of evil." Now, if we make our trades and swappings in the same way, wouldn't it be a very great escape from "evil"? You feel happier, your neighbor feels happier, and all the world looks happier to you when you pay cash down for what you want, or else "don't do it." One more idea. I have thought that unprincipled men sometimes purposely entered into complicated bargains with a view of having convenient avenues to slip out of what was plainly understood at the time as a bargain. Our short-hand writer suggests that some fishes sometimes roll the water on purpose to make a cover for escape.

SOME PLEASANT WORDS IN REGARD TO FLORIDA.

HOW TO PREPARE BEES SO THAT FOUR COLONIES
MAY BE CARRIED IN ONE HAND, LIKE A VALISE OR TRAVELING TRUNK.

ON the 24th day of November last I left my home in Indiana for Florida. I did not stop anywhere until I arrived at this beautiful place, on the Halifax River. I have hesitated for some time to write to you and your readers, fearing that my first impressions might be too highly colored and misleading; but after six weeks of close observation I find no cause to change them. I have not been in any way disappointed by the letters I have read of Florida, and I fully indorse the statements made by friend Hart, of New Smyrna, which is only eighteen miles south from Daytona.

I find the winter in Florida most delightful; the air is pure and balmy; flowers are blooming, oranges and lemons are ripening, and the bees have gathered honey and pollen almost every day since I have been here.

When I left home I took four colonies of bees with me, and succeeded so well that I think it might benefit others to know how I managed them. I use the Gallup frame. My hive is 12x12x18 inches long, inside measure, of very light and thin lumber. I made four boxes like my hive, only 6 inches long, across the bottom of which I fastened two pieces with notches cut into them to hold two frames secure in place. I then removed the hive I wished to

transfer, and put an empty hive in its place; cut a small entrance-hole in my box, and put it in the empty hive on the stand. I then selected two good frames with some honey, and put them with the bees on them, in the box, left the top of the box open, and closed the hive, and shook the rest of the bees in front of their old stand. They all ran in, and the next morning they were all where I wanted them, clustered on the two frames in my box. I carefully closed the entrance, and covered the top with wire cloth, and securely fastened the top of the frames. I now had them all on two frames in a box 12x12-6½ inches long, outside measure. These four boxes I fastened together with light hoop iron, with a handle on top like a gripsack. I now had a box 12x12-26 inches long, with open top, covered with wire cloth, containing four colonies of bees. They weighed about 50 lbs., and I could easily carry them from one train to another. In short, they were no more trouble to me than a common valise, and did not cost any freight. I kept them by my side all the time, and once a day gave them some water. They did not like to travel in the cars, and made some considerable noise; but when I opened them in Daytona there was not over a teacupful of dead bees in the four boxes. I made hives for them, and gave them empty frames, and they are doing well, building combs and raising brood.

On the cars, in hotels and depots, they were the cause of some friendly acquaintance and pleasant conversation. I met many bee-men, and they would notice the bees, and approach me, and you know how time flies, and how pleasant it is to have a friendly and interesting conversation.

I am very favorably impressed with the climate and conditions of Florida so far; but you know the old adage, "No rose without a thorn." I intend to stay here during the summer and observe further; if the summer should prove endurable, I will make this State my future home, and have my family come here; for, as I said before, the winter in Florida is most delightful. **HENRY STINEBACH.**

Daytona, Fla., Jan. 10, 1885.

THE HUTCHINSON'S HEDDON HONEY-BOARD.

HONOR TO WHOM HONOR IS DUE.

BRO. ROOT:—GLEANINGS is just at hand this Monday morn. After reading your account of what you saw at the Michigan State Convention, I want to remind you of the fact that I call my hive "Heddon's Langstroth hive;" that brother Hutchinson's queen-excluding honey-board that you already offer for 15 cts. each, is Hutchinson's Heddon honey-board. To make it clear of my inventions there must be no raised rim around the outsides, and the slots must not regularly break joints with the top-bars of the frames below. I think by the cut that the slots do not so break joints, but I think the one brother H. had at Kalamazoo last fall did, and such would be much better, as I know by actual trial. Where they do not, the bees fill the slots with comb, and they fill the small queen-excluding slot much worse than the ¾ double bee-passage slot, as strange as it may seem. I consider queen-excluding boards better of metal, and of no earthly use for comb honey at all. I have been there too.

To use two bee-spaces, outside of my inventions,

one must create the upper bee-space by virtue of the surplus receptacle, and *not* the honey-board. I think *not*; but for the sake of the argument, let us suppose that the narrowing of the slots, to exclude queens, an improvement. No one can honorably build an improvement on another's invention; and because of such improvement, rob the first of his improvements. Every civilized nation recognizes this in its patent laws, as you are well aware. I could have patented the raised rim and break-joint slots, but no patent could have been obtained on narrowing these slots so as to exclude queens. I have had a great deal to do with patents, and so have you had something to do with them lately, and you are undoubtedly aware of the above fact last set forth. I worked hard, experimented much, lay awake, and wore down my nervous system when others were asleep (as I should have been), invented, had these inventions laughed at, worked to get them before the public, and now, just as they are getting popular, I don't want them taken from me, neither in honor nor trade; and whoever does so, I want him or them to give me some reason why they do so, or admit that "might makes right," and call ourselves heathen. You may publish this if you wish.

P. S.—By error, you misjudged my circular regarding the bees we sell. See bottom of page 12, last three lines. We do sell pure Italians. Thanks for your friendly words. I consider the bee matter just something you overlooked. **JAMES HEDDON.**

Dowagiac, Mich., Jan. 19, 1885.

Friend H., we did not have an engraving made of the honey-board sent us by friend Hutchinson, for our crate of sections itself fixes the bee-spaces, so that honey-boards for the Simplicity hives would need to be as we figure them in the cut you mention. This cut is exactly the same honey-board we have been selling for years, with the exception of the perforations. Now, the idea of making the perforations with a circular saw, if I am correct, belongs to friends Taylor and Hutchinson; but as they are exactly like the perforations in the Jones zinc, only on a larger scale, so that they may be made in a wooden board, I can not see that there is much invention about it. If I am correct, making something of wood that has been formerly made of metal is not a patentable idea. Your honey-board must be something distinct and definite from any thing we have mentioned, and very likely your idea of having the spaces so arranged as to break joints in the brood-frames is going to be worth more than the queen-excluding arrangement. The one sent us by friend Hutchinson seems to have the perforations made at random, so I presume he did not have this point in view. I should say your honey-board, as you describe it, is, without question, patentable; and I do not believe any of our supply-dealers will offer it for sale without permission from you.—In regard to the matter of pure Italian queens, I now see that I made a mistake in running over your circular hastily, and hereby beg pardon.—As none of the cuts in your circular, nor any I have seen in print, show clearly how your honey-board is made, and its office, we will, with your permission, have a good engraving made as soon as the sample you say you sent us comes to hand.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

HONEY FROM BANANAS; MOSQUITO-HAWKS IN FLORIDA.

ONE of your correspondents says in GLEANINGS that either the rivers of California and Florida flow with honey, or bee-journals are sadly in need of a department for our friends who reliable to err in statements. We can not speak of any of the rivers but the St. John's, which is a pretty fair place we think. We have not been able to give our bees very much attention, and can not complain, though we can not give as big reports as some have done. Ours are all blacks, and we have averaged 40 lbs. per colony. The honey is here not in the river, but about as near as it could well be, for the bees collect it from plants and trees that grow in the water, besides a great many that grow on the land; but our industrious little workers have a great many enemies, and at times the havoc they work among the hives is dreadful. The dragon-fly, or mosquito-hawk, is one of the worst. Sometimes there seem almost as many mosquito-hawks as bees flying, and the way they do pounce down on the bees and carry them off is astounding, and there are many other enemies of which we will not speak at present.

We raise some bananas, but do not think much of them as honey-plants. The sweet fluid that drips from the bloom is not thick, but quite watery, about the consistency of the maple sap; nevertheless the bees seem very fond of it, and do not slight it when honey of better quality is abundant. When we get all those new appliances, drone-excluders and queen-excluding honey-boards, and if some invent, jive genius will invent some method whereby we can beat the mosquito-hawks and a few other bee-destroyers, then you may hear a big report from us.

Osteen, Fla., Jan. 12, 1885. MARY Z. RUSSELL.

FINDING DEAD BEES IN FRONT OF THE HIVE.

Why do so many bees die off in the winter? We have seen large numbers before our hives this winter, dead, and yet the colonies are very large, and doing well. It seems to be common among bees, and I should like to know what causes their dying off so.

MRS. WM. SWIGART.

Dixon, Ill., Jan. 9, 1885.

This question seems to come up frequently, my friend, and we have given frequent answers. I am inclined to think your bees are all right; and the fact that it is a large colony, and has been well, would seem to strengthen that idea. With a population of 40,000 it would be nothing strange if forty or fifty should die daily, from natural causes; and if you see these scattered about on the snow in front of the hives, you would be likely to think something was wrong. Of course, you would see most dead bees in front of the most powerful colonies. Is not this all the trouble?

FROST INSIDE OF THE HIVES.

I have my bees in Simplicity hives bought of you last spring. Each has 7 frames of honey and chaff-cushion division-boards, and chaff cushions over the frames; all are on their summer stands. During our coldest weather the frost collects on the ends of the frames and metal rabbets. I find the bees all col-

lect on one end of the frames near their entrance. Do you think it is caused by dampness?

Fairfax, Mo., Jan. 12, 1885.

G. M. SHAVER.

I think there is nothing wrong about your bees, friend S. The frost is the perspiration from the cluster, and it is almost always found in hives made of a single thickness of boards, unless the colony is so very strong that it fills the hive so completely as to keep the frost out. When the weather moderates, this frost will melt and run down, often running out at the entrance. If it collects on unsealed honey it dilutes it, and sometimes we have sweetened water running out of the hives. As a general thing it does no particular harm, unless so much ice collects as to wet the bees, or dampen their stores. The remedy is to use a chaff hive, which we always recommend for wintering, although bees usually winter all right in Simplicity hives.

HONEY FROM THE ISLAND OF CUBA.

I send you by this mail a sample of campanilla (or bellflower) honey, which is just as thrown from combs to-day. Please sample it and report. Will give you final report after a while.

Cuba, W. I., Jan. 8, 1885.

Thanks, friend O. The sample of honey sent is of a beautiful light straw color, very transparent, of good body, and of a fine aromatic flavor that we should think entitles it to a place on an equal with either basswood or clover. We should be glad to hear further reports from you.

MY BEES AND CARP.

I have three stands of bees, all in chaff hives, put away with chaff division-boards, and upper story with sack filled with chaff. I got only about 40 lbs. last summer. The drought cut short the white clover. As to carp, I built a small pond, I think about 1880. It contains about $\frac{1}{2}$ acre. I received from Washington about 16 German carp; introduced them in fall of 1881. I did not see them any more until last June, when I discovered my pond was alive with small fish. I commenced to feed them, and also advertised them in our county paper, and succeeded in selling 1450, from one to two inches long, and have a goodly number yet remaining in the pond.

NOAH HORN.

Roseville, Ohio, Jan. 14, 1885.

WHAT TO DO WITH HIVES CONTAINING OLD BLACK COMBS, ETC.

In the spring we had 12 stocks, which have increased to 20. In the fore part of the season, bees did pretty well. I took about 300 lbs. of extracted and 125 lbs. comb honey. My hives are all frame, of my own make. Most of the comb honey was taken from two-story hives, the second story being about six inches deep, containing frames that hold about 5 lbs. This is the most satisfactory size to my neighbors, and are handy to extract from. I have sold my whole crop right at our door, at prices ranging from 10 to 15 cts. per lb. I use a home-made extractor, made out of a barrel, which cost me \$134, besides my own labor.

I have several hives in which the combs are so thick and black that it is unfit for use; how am I to get rid of it without sacrificing the brood? What would you do with light swarms at this time of the

year? I have not the time or money to experiment, so please give me your ideas of the matter.

E. W. OSBURN.

North Adams, Mich., Oct. 13, 1884.

Transfer those old hives, friend O., and save only the good comb, or that containing brood. If there is brood scattered about in poor unshapely comb, fasten it into frames so as to keep it until the brood hatches out, then throw it away. Most of the transferring done now, I believe, is so managed that only the best of the old comb should be used, and the hive filled out with the modern kinds of combs built on fdn. placed in wired frames. If I had light colonies in October I would endeavor to take them through by feeding; if they are too weak to be fed, double them up; and I do not know how you can manage it without taking some time or money. Uniting can be easily done in the cellar, but you will probably lose one of your queens.

FRIEND FOX'S BEE-FEEDER; HOW TO MAKE IT.

I take a Langstroth rack to the tinner, and have him make me a tin box the exact size of the rack, with the exception of the depth, which is 6 inches instead of 9½; put a ½-inch tin thimble in the center of top-bar, to fill from; insert a cork after filling; put in the bottom, four tin gauze-thimbles, these to be filled with sponge; leave quite a bunch for the bees to cluster on. When filled, raise the cover and insert the feeder in center of cluster, and the bees will empty it in a short time, the outlet being in center of cluster, and there being no danger from robbers, and no daubing of hive, and no escape of heat from the hive.

Hillsborough, Wis., Jan. 5, 1885.

E. FOX.

The new feature in this feeder seems to be in arranging it so the feed will slowly ooze through bits of sponge, and these pieces of sponge are held in place by wire-cloth tubes, so that a large number of bees can have access to them. By the time you have fed heavily for a day or two, I am inclined to think the bees would build a comb covering the sponges all up. One trouble I have found with similar arrangements is, that when we are filling many hives it is difficult to see just when your feeder is full, unless you pour very carefully and slowly.

F. J. FLORY'S SECTION-CLAMP.

Get four pieces of stuff, cut the same shape as the hollow-angled sample sent, place 2 of these with hollow side up, put in a 1-lb. or any sized section near the middle, then put the other 2 pieces on the top of the section, and tack all with your very small wire nails, then you will see that you can slide in other sections the same size till you fill the clamp to whatever length you require. Another lot of sections in same shape will fit over these, and you can tier up as high as you like, and have a bee-space between. When the top is filled you can reverse in a moment, if necessary; and if only some are filled you can slide them out and put in others. The small wire nails can be drawn out with the point of almost any knife. By tiering up in this style there is always a ½-inch space between tiers, and by cutting your clamps the required length you can put in your tiers alternately endwise, or across, as you desire.

I think you, better than I, can appreciate this

idea, which I feel sure is very valuable to those producing comb honey. All credit is due to F. J. Flory, of Lemoore, Tulare Co., Cal., who so unselfishly presents it to his brother bee-keepers, without taking any patent on it.

GEORGE HOBLER.

Hanford, Cal., Jan., 1885.

The sticks sent us by friend H. are made exactly in the way we make chaff-hive corners, only they are sawed out from a ½ board. They are sawed so that the thickness of the stuff is ½ inch. This will leave the sections about ½ inch from each other, and a tier of them can be handled as a single box. Now, although these ½ bee-spaces have become quite fashionable, it seems to me they are quite objectionable. The lower tier of sections must have a bee-space under them. Why any more bee-space? It is true, it enables us to handle six or eight sections as one box, but how are the ends to be closed? The same thing has been a long time in use, only folded tins were used instead of the wooden troughs. The folded tins would probably cost the same, but they would reduce the bee-space to little or nothing. It seems to me I would have a little square board at each end, and then these long boxes made up of sections can be sent to market if desired. The idea may find favor with many of the brethren, and we thank friend Flory for suggesting these V-shaped clamps which can be so cheaply made.

TREATMENT OF FOUL BROOD ON THE CHESHIRE PLAN.

We extract the following from a circular just received to-day.

"Treatment of '*Bacillus alvei*,' or Foul Brood, by absolute phenol, according to the 'Cheshire' method.

ABSOLUTE PHENOL.

To obtain it of the desired strength, dissolve 40 grammes of absolute phenol in crystals, in 10 grammes of water.

PHENOL IN SOLUTION, FOR TREATING THE DISEASE.

Put one part by measure of the above mixture in 20 parts by measure of water; shake carefully until the oily deposit has disappeared completely, and take great care to use no vessel that is not perfectly clean.

MEDICATED SYRUP.

Put one part by measure of the above-named solution in 20 parts by measure of syrup.

TREATMENT.

The following instructions are of the greatest importance, and should be strictly adhered to:

Reduce the infected colony to the number of frames that the bees can cover, by putting any superfluous frames behind the division-boards, and then commence to feed the medicated syrup, which must be fed regularly every evening. If the bees accept the feed in the ordinary manner, all is well; if not, it must be spilled into the empty cells of the brood-chamber (beside or above the brood), keeping the hive quite warm so as to encourage breeding. Do not remove the queen unless it is suspected that she is sick. If there are enough bees to raise brood, the most severe cases will soon yield to this treatment. As fast as the bees need a larger number of combs, give them one of the infected combs placed behind the division-board. A rapid raising of brood is most important: the quicker this is accomplished, the quicker will be the cure. If at the end of some days the bees take the feed well, it can then be given in bottles on top of the frames in the ordinary manner.

With a view to facilitate a trial of the 'Cheshire' cure I have had small vials, prepared which contain 40 grammes of absolute phenol in crystals (the purest obtainable), and will mail them anywhere in the United States on receipt of 50 cents by postal note or stamps.

This quantity is sufficient to prepare 23 quarts of medicated syrup—more than enough to treat several colonies.
 Germantown, Pa. ARTHUR TODD.

The above is a wonderful invention, if it be true; but if I am correct, several of the friends report, in the *British Bee Journal*, failures after having tried it faithfully. If foul brood can be cured by simply feeding bees medicated syrup, it would be worth thousands to our country. Please pardon me for being a little skeptical; but the truth is, I can not quite see how cells containing diseased larvæ in a putrid state are going to be cleaned by feeding the bees medicated syrup.

RAISING PLANTS FOR CARP.

Somebody sent us the following, on a little scrap of paper:

The Fish Commission at Washington had been informed that the plant called great bladderwort would furnish excellent food for young carp. They procured a large number of plants, and had them set out in the carp-ponds. The plants came high, but, as they were good for the fish, they had to have them. Then they watched patiently for the carp to eat the plants. They had not watched long till they discovered that the plants were eating the fish. The small bladders growing on the leaves caught the small fry in great numbers.

Well, I am sorry the speculation turned out the way it did; but there is one thing I am glad to know, and that is, that the Fish Commission are so eagerly looking up this matter. A plant that will grow rapidly in the water, and would be eagerly devoured by the fish, is the next great thing to be desired.

AN AUSTRALIAN LETTER.

I have been diligently studying A B C; have made my start as a bee-keeper, with 5 hives purchased in Sept., which is our first month of spring. They were in *old* boxes, and, I dare say, had been in use for some years, as the comb was mostly black with age, and very tough (I suppose with the webs of repeated brood-rearing).

We succeeded in transferring them to Langstroth hives, and supplied them with comb foundation. We used only about 2 frames of the brood-comb, as there was, in my opinion, too large a percentage of drone-cells among it. We got very little honey from these hives, the cause being attributed by me to the immense number of drones each hive contained.

I may say here, that I have thought about bee-keeping for a long time past, and have read nearly every thing on the subject that came into my hands, and it has now turned out that my reading was mostly of obsolete works. It was in the *American Agriculturist* that we first heard of A. I. Root and of Quinby and Prof. Cook. I would have made a start with 20 or 30 hives if it had not been for your earnest admonition to the contrary, the value of which advice I now very much appreciate, and to its neglect, an apiarist of my acquaintance, owning about 100 hives, attributes his utter failure. Our bees are common brown or black bees, but I intend to Italianize them as soon as possible, beginning with the hive I am expecting at my house. I can procure a tested Italian queen, second grade, \$4.80; first grade, \$12.00. I shall start on a second-grade queen, following A B C, and afterward I will try the first grade for queen-rearing on my own account.

STEPHEN MALLARKEY.

Sidney, N. S. W., Australia, Dec. 2, 1884.

JACKSON'S SOLAR EXTRACTOR.

I here give you a description of a solar-heat wax-extractor, as made and used by Mr. A. Jackson, of King's River, Fresno Co., California. Take two boards, 1 x 16 inches, 4 feet long; nail carefully at angles, making a V-shaped trough; put on ends, then line with tin, carefully soldered. Put a honey-gate at one end near the bottom; put cleats around the outside, near the top, to rest the upper box on. The upper box is made of 1 x 6 lumber, to fit on the cleats bee-tight. Before nailing together the top box, have 2 saw-cuts put in it all around, the first one inch from the top, the second 2½ inches from the top. Now nail sides to one end, and slip glass into the saw-cuts, and screw on the other end. Now make a frame, to fit about 1 or 2 inches inside the trough; on this frame tack burlap, and put in place; put your cappings, or combs to be melted, on the burlap frame, then put on your top, and give the whole a lean endwise, and face to the sun, where, if hot, your honey and wax will soon pass through the burlap, and the honey can be drawn off by the gate, and more material added, and the wax taken away at leisure. When the burlap becomes clogged by refuse it can be taken off and boiled, to secure any wax which may remain, and another can be tacked on to the frame. This has proved very effective here. GEORGE HOBLER.

Hanford, Cal., Jan., 1885.

Thank you, friend H. The above solar wax-extractor is very simple, and easily made, and I will at once have one gotten up; and if it works as well as I suppose it will when the weather is warm enough, I will try to remember you and friend Jackson a little more substantially. May be such an arrangement would work in California, on account of the more intense heat of the sun, when it would not here. I should hardly think a 1½-inch space were needed between the two lights of glass, but very likely friend Jackson has experimented on this, and knows what is about right.

BEEES WORKING ON RED CLOVER.

In regard to bees working on red clover, I see some say that the blacks do not. In some seasons they do, in others they do not. When the large clover grows to a great size, the bloom opens so they can crawl down far enough to reach the honey, otherwise not.

I have 33 colonies; no swarms this season; rather poor season for honey. JNO. JACOBUS.

North Urbanna, N. Y., Jan. 2, 1885.

EPILOBIUM, OR WILLOW-HERB.

This is in no sense a fireweed. As you call for any light that any may be able to shed upon the above plant, I will say that I have observed it (whenever I went north), and corresponded with several about it for the last six years, and I have known it to be a fine honey-plant; but I never sowed or planted a seed of it, for I feel quite sure it can never succeed so far south as our latitude. Now, if you will study it further, both by botany and correspondence, with those living north of 44° north latitude, I feel sure that you will arrive at the same conclusion I have, that we can never cultivate it successfully as far south as we reside.

Dowagiac, Mich., Jan., 1885. JAMES HEDDON.

Thanks for your timely reminder, friend H. While I think of it, all reports from the willow-herb have been from Maine, or the northern portions of Michigan, and may be

it would not grow and bear honey here. But this we do know, that the *Gaura biennis* bears honey most amazingly in our flower-garden. And, by the way, there does not seem to be anybody able to furnish us seeds. There is one consolation, however: as the seeds grow themselves when self-sown, we shall have a lot of them in the spring, from the seeds dropped off in the garden before I got up early enough to know what an acquisition we had right under our "noses."

KEEPING THE BEES AWAY FROM THE CIDER-MILLS AND CANE-MILLS.

What, in your opinion, is the best method to keep bees away from our cane-mills and evaporating-pans in the fall season, when honey is scarce in the flowers? How would it do to feed sugar syrup a few rods from the hives, in an opposite direction from the mill and evaporator? I have some coolers not in use, made of wood, sides and ends, 6 ft. x 3 ft. x 6 in. Could I not utilize these for feeding, by placing narrow strips of wood on the bottom, for the bees to stand on while taking the syrup? Should this plan be successful, it strikes me it would be economical, as the season for syrup-making comes just at the time (in our section of country) when the flow of honey generally ceases, so you see the syrup fed would be put up for winter stores. And should this plan work for the sorghum-maker, it will also prove advantageous to the cider and vinegar manufacturers. T. J. CROSS.

Shiloh Hill, Ills., Jan. 14, 1885.

Friend C., I have made a great many experiments to draw bees away from the cider-mills with sugar. You can not do it unless you feed an enormous amount of sugar, and in doing this you will make a regular row all over the neighborhood. They are too eager for the cane sugar; and after you make it so thin with water that it is not much of an object, it soon sours, so there is considerable expense attending the care of such a feeding arrangement. We succeeded much better with grape sugar, for they did not care enough about that to get into much of a robbing mania. I think by far the cheapest and pleasantest way will be to cover your cider-mills and sorghum-factories with suitable sheds, having all the openings protected by wire-cloth doors.

THE YUCCA, OR SPANISH-BAYONET BRUSHES, USED FOR BRUSHING BEES OFF THE COMBS.

In one of the barrels of brushes I send you to-day, near the top you will find a photograph of a yucca, from which these brushes are gathered. Seven years ago a gentleman who resides at Pasadena brought it from the mountains, and set it out in his orange orchard. From that time until the past summer it received the same care and attention that his orange-trees received. The result of the cultivation can be seen in the photo. Last spring it started to throw up its center shaft, or flower-stalk; it was eagerly watched, to see what height it would attain. Just how high it was I do not know; but as nearly as I can remember, as I stood beside it, the top of the leaves that surrounded the flower stalk were as high as my shoulders, and I am just five feet and eight inches. You can also judge its height by comparison with the bearing oranges just back of it. The flower-stalk is the growth of but two or three months; and as it stood there with

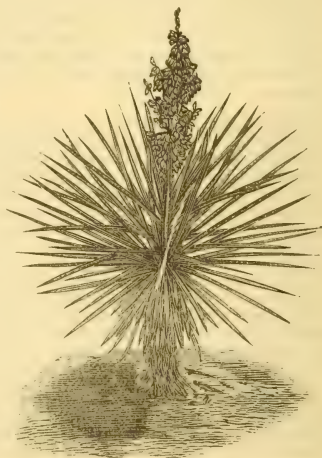
its top completely covered with these creamy-white flowers it was a sight that is seldom seen. While in bloom it was visited by hundreds from all parts of the county. I went nine miles and back just on purpose to see it. This species of the yucca (*Yucca baccata*) dies after it blooms; the remains of this one were taken up and placed in the public library at Pasadena, where it can be seen by any one who will take the trouble to call.

Now, friend Root, can't you afford to give the readers of GLEANINGS a view of this magnificent plant, and attach the above description to it? Note, also, in both GLEANINGS and price list, that the fibers of the yucca-brushes are apt to get pressed out of shape in shipping; if they are thoroughly wet you can place them in almost any position; if kept so until they are dry they will stay in that shape.

In the barrel of 1125 is one of the leaves as it is taken from the flower-stalk of the yucca, "with the thorn and all." I think you will be pleased with the brushes, as they are as fine a lot as I have ever seen. There are a few that are below the standard, but these are thrown in without counting. I would suggest that the brushes be left in the barrels until they are sold, as they will keep better in that position than in any other. See how nicely they pack in barrels. W. W. BLISS.

Duarte, Los Angeles Co., Cal., Dec. 8, 1884.

Thanks, friend B., for telling us where our bee-brushes grow. I would have the beautiful plant engraved, which you send, but it would be pretty expensive; and as it is not strictly a honey-plant, I think it would hardly be best. We present below an engraving made several years ago, of the same plant; but of course it is not nearly equal to the one you have shown in the photograph. Perhaps I might inform the friends, that by buying these brushes in such large quantities we can now sell them as follows: 5c each, 35c for 10, or \$2.50 per 100. If wanted by mail, add one cent each for postage.



THE YUCCA, OR SPANISH BAYONET.

LUMPS OR CAKES OF ICE INSIDE OF A CHAFF HIVE.

Yesterday I examined the bees in the one-story chaff hives which I received from you, and found bees in splendid condition, covering frames nicely, except in one hive, out of which I had taken last fall one frame with honey, and not filled up the space thus made, it being an outside frame. That space was $\frac{1}{2}$ inch thick with frosty evaporation. Had I better scrape it off and put a frame with honey in its place? W. A. THOLEN.

Port Washington, Wis., Jan. 17, 1885.

I would take out the ice if I could get it out handily, friend T., and then move up the division-board so as to occupy this space, and fill back of it with chaff. I should think the colony, however, that contained the ice was too weak to fill the brood-nest properly, so as to expel the moisture. Are your chaff cushions over the cluster sufficiently porous? This is one reason why forest-leaves thrown loosely into the upper story have been suggested. The dampness would pass up through them, and go out at the ventilators, unless the colony were very weak. In that case, ice might collect on the leaves; but as soon as the weather becomes warm enough, it would melt and evaporate, the moisture being carried out by the current of air generated by the cluster of bees beneath it.

FRIEND WILLIAMS TELLS US A SURE WAY TO CIRCUMVENT THIEVES.

Let me tell how I manage to keep thieves away. For the last seven years, I kept a cupboard under the smokehouse shed, with honey in it. I let every one know it was there; some were too well bred to ask for it and some bread to eat with it, and I would rather they would take it than interrupt the hives; and if any one wanted honey in sickness, it was always ready, without money and without price, and they came right along and got it. They knew we kept some to give away to the sick; and when they offered pay, we told them no; they were welcome to it. I don't know whether that is the best way or not; but that is the way we did, and will do so again as soon as we get fixed in our new home, though there is but little fixing to do, as I am succeeding W. C. Pelham in the bee business, only not in fdn. mills. We are partners in bees and honey.

Maysville, Ky., Jan. 5, 1885. M. L. WILLIAMS.

Thank you, friend W. I believe your plan will work every time. In fact, I am under the impression that it will be cheaper and surer than shot guns with strings tied to the trigger. I think, however, I would let people pay for the honey when they want it for sickness, if they want to do so; but let all your neighbors know for miles around, that if anybody has not the money to pay, or would rather steal it than pay for it, they can have it for the asking. People who have a reputation for generosity like this, seldom have their property meddled with by thieves.

CLEANING OUT SMOKER-TUBES WITH A HOT WIRE.

When my smoker needs cleaning I have not time to scrape the sticky soot from the tube; but as "like cures like," heat fills the tube, and a hot wire or small rod cleans it out "quicker."

A TWO-PRONGED WIRE NAIL WANTED.

I should be pleased to be favored with the address of manufacturers of the wire nails you sell, for the

purpose of having staples made of small wire, to fasten wire cloth to queen-cages, door-frames, hives, and to be used in making pint and quart berry-boxes. Please look at a berry-box, and see how the grain of one part of box runs across the grain of the other part, and you can judge how much stronger the staples will make the box, as well as lessen the liability of having one of those rascally cut tacks drop into the cup of a large raspberry. We buy cut tacks at 60 cts. per lb. The wire staples will have to be cheap to compete; but when we see how much better they are than tacks, possibly we can afford them. If you will ask the manufacturers to make them, allow me to suggest the No. 21 wire, prongs of staple to be $\frac{1}{4}$ inch long, and the main part of staple to be $\frac{3}{8}$ inch long. Such staples will be just the things for fastening building-paper, etc. H. M. HAWLEY.

Terre Haute, Ind.

Thanks, friend H. Somebody has once before mentioned that a stout iron wire of the proper size, bent so as to conform to the curve of the smoker-tube, would, when heated red hot, clean the tube out in a twinkling.—Two-pronged tacks are already in the market, but they are not strictly the two-pronged wire nail. Our wire nails are made by the H. P. Nail Co., Cleveland, O., and by Albert Field, Providence, R. I. From the large quantities of wire nails that we purchase yearly, we are enabled to give better retail prices than they would probably give any of our customers. If I am correct they do not sell less than a 100-lb. keg of any size. I will send your letter to them in regard to the two-pronged wire nails wanted. I agree with you, that it would be a desirable thing for basket-work.

WHAT IS IT BESIDES WAX THAT HONEY-COMB IS MADE OF?

I find that when all the wax has melted out of it the cells retain their perfect shape if not put out of shape before the heat is applied. G. HOBLER.

Hanford, Cal., Jan. 10, 1885.

Friend H., if you are talking about brood-combs, you probably mean the cocoon that is added to every cell every time a bee is hatched in it. But aside from this, it is claimed that the cappings of the purest comb honey do not all render into wax. What this other matter is, no one has yet been able to tell, so far as I know. I think it was friend Bingham, of Abromia, Mich., who said that a pound of clean cappings from comb honey would not make nearly a pound of clean white wax.

STILL ANOTHER INVENTION FOR CLEANING SMOKER-TUBES.

I have been much annoyed by the curved air-blast tube in my smoker getting choked by a vile mixture of soot and pyroligneous tar. The only effectual cure I have found for it is hot iron. Take a piece of large wire, say one-fourth inch diameter, curved at one end to fit the curve of blast-tube, and sharpened with a file about as you would a cedar penell; heat this to a red or even white heat, and pass it quickly through the nozzle of the smoker into the blast-tube and out again a few times, and, presto! it is as clear as a whistle. A small number of wire will not do well, as it gets cool too easily. With care not to burn the valve of the bellows, you

will find it a "sovereign remedy." The wire, well heated, is a sort of lamp, giving light by which to find the end of the small tube. This simple device may keep some of your A B C scholars from doing just what I did before I thought of it; viz., taking off the leather from the bellows to get at the tube to clean it; for I found the sticky stuff would not yield to the persuasions of any sort of swab or scraper I could get up. W. L. ANDERSON.

Ninety Six, S. C., Jan. 8, 1885.

Thanks, friend A. Our apiarist has just found a smoker, the tube badly clogged up with this black tar, and he says although he did get it cleaned out with a hot wire he had to heat the wire three times, and he thinks it took more time than the little wire hook we recently illustrated. We have found no trouble in cleaning any of the tubes with this.

REVERSIBLE FRAMES AND REVERSING DEVICES.

THE ABSORBING TOPIC OF THE DAY.

FROM the number of letters and number of devices that every mail brings, it would seem this is now the principal topic of interest. We will begin with the plan adopted by friend Heddon:



HEDDON'S REVERSIBLE FRAME.

Above we give an illustration of the frame preferred by friend H., and underneath a description of it, copied from the *A. B. J.*:

I will give my reasons for preferring the style of frame illustrated, above all others that I have yet seen described. At a glance, almost any one can estimate the extra cost of constructing such a frame. I believe this frame to be worth several times more than the extra cost, more than the common non-reversible frame for only once reversing for the purposes just mentioned, if for none of the advantages hoped to be gained in the ways spoken of in the first part of this article.

Again, I much prefer this frame to the old style, even if I never reversed it at all: 1. I am not troubled with sagging top-bars; and the outer bar, the one which governs the uniformity of the bee-space, or Langstroth shallow air-chamber below the honey-board, never sags. If the inner top-bar sags, it does little harm, and when reversed, the sag is thus converted as it straightens back to place, and the new top-bar (just from the bottom) will not sag. In reversing, I either shake off the bees or revolve the inner frame very slowly. I generally prefer to shake off the bulk of the bees, and I have found that on an average I spent five minutes to each hive (counting opening and closing) in performing the reversal of all the eight frames. Bits of comb and propolis bother but little, as the sharp corners of the wood pieces shave them away like a pair of shears.

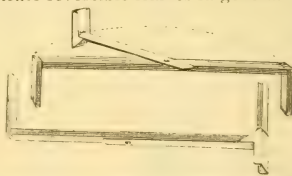
2. It will be noticed in that while the top and bottom bars of this frame form "bee spaces" with the hive the same as other frames, the ends do not, and in this difference I find an improvement. It will also be noticed that the short end-piece is tapering, regarding its thickness. Now, the whole end while in the hive comes, top $\frac{1}{2}$ of an inch away from the hive end, the bottom of the short piece $\frac{3}{4}$ of an inch, and all below that, $\frac{3}{4}$ of an inch away. This large opening, while it greatly facilitates in the rapid and easy withdrawal or insertion of the frame, is in no danger of the bees building combs

in even so large and handy a space where such space is *no higher up* than shown in the illustration. While this frame is of slightly less capacity or surface than the standard Langstroth frame, it has a greater brood capacity when reversed, and fits the same hive as the standard.

The above frame certainly possesses some very marked advantages—cheaply made, strong, quickly reversible, without any loose pieces, and will be one of the nicest frames to handle, so far as lifting it out of the hive is concerned, that has ever been constructed. In fact, our British friends have adopted and used, to a considerable extent, a frame made smaller at the bottom than it is at the top, to be set in a hive with sloping ends, just to accomplish what friend H. has with his reversible frame. Now, if we were to build new frames right out, I do not know but that the above management is the best thing we can get; but if they are to be used in the same hives we have been using, a frame of smaller dimensions must be adopted. We have less space for honey and brood, and our old combs must be either cut down, or thrown away. A good deal of waste space is also occupied right over the brood-nest. In fact, I do not know where friend H. is going with an extra top-bar and honey-board, and two extra bee-spaces. I do not really gather from the description, whether a bee-space is to be left between the two top-bars or not. Will friend H. tell us in regard to this?

OTHER REVERSIBLE FRAMES.

Last month we spoke of an invention of Mr. Nimshi Nuzum. Well, so many other new things have come up since then, that we will not have an engraving made of it. It is substantially the same as the Howes reversible frame, illustrated and described last season. We give the cut again, however, to illustrate reversible frames in general.



HOWES' REVERSIBLE FRAME-SUPPORT.

Well, friend Nuzum's device was almost exactly like the above, only it was made of one piece of metal, without soldering. We found the blanks could be cut out very cheaply; but when it came to folding them we found it a pretty slow process. The Broers frame, mentioned just before we went to press, is also made of one piece of metal; but instead of being hinged as in the cut above on the *flat side* of the end-bar, it has two arms, and is hinged in each *edge* of the above end-bar, making a sort of stirrup arrangement, or like a swing, as it were, swinging on *two* pivots. The corner is much like the corner in the cut above. Now, in both or all of the above arrangements, a good deal of accuracy is required, for the supporting arm must just slip over the corner of the frame. If it should be too long it would look awkward, and fit badly; and if it were too short it would not slip over at all. This

would be quite an objection in adapting it to the various frames already in use.

And here comes in friend John McGonnell, of Mill Village, Erie County, Penn., with an arrangement made of one piece of metal, no solder required, that is like the Howes frame shown above, but does not go over the top-bar at all. We thought once it was ahead of all others, and made a modified model, from which the engraving below was made.



McGONNELL'S FRAME-REVERSING DEVICE, SOMEWHAT MODIFIED.

Well, this works nicely, and it does not matter whether it fits exactly to the frame it is intended for or not; but it can not be made without soldering, and it has, also, the sharp corners that have been objected to on our metal-cornered frames. The supporting arms are also liable to get bent, unless made of quite heavy metal. We figured on this a day or two, and then Mr. O. C. Thompson, of Emporia, Kansas, sent us an arrangement made entirely of stiff wire, that does all that McGonnell's device does—makes a nice corner to handle—nothing to hurt the fingers. It is, however, hinged by a single rivet, like the Howes arrangement.

Well, now, friends, from all these we have made one of wire, that will reverse as quickly as the Heddon arrangement; can be put on to any frame in an instant, almost, without screw or tack or wire nail, and yet requires no great accuracy. It is made of a single piece of wire, and swings on two pivots. The arms are made of stiff wire, bent a good deal like the arms of our metal-cornered frames. We are too late for engravings this month, but the arrangement looks a good deal like the loop on the top of an old-fashioned door-key—two folded ovals of wire, as it were. The stem of the key would represent the arm of wire that they swing on. The corner of the frame comes between these two ovals. We put our frames together, using all bottom corners. After the frame is done, the wire-reversing attachment is put on by making an awl-hole through the center of the end-bar, boring through edge-wise. If you take a frame in your hand in the ordinary way, holding it by the supporting arms, one in each hand, you can reverse the frame in less than a second, keeping your fingers hold of the supporting arms. Of course, something may come in still ahead of this; but the prospect seems to be that the invention is to be the work of a great number of minds. It is a little remarkable, that the same thing exactly comes from individuals far remote from each other; thus, J. W. Martin, Greenwood, W. Va., sends a model *exactly* like the Broers model.

Now, you know I have commenced paying for such devices as pleased me—for such as I wanted to use; but I really can not tell how to pay in regard to this reversible-frame business. What we have at present decided on

is unlike any thing sent in to us. I have given friend Hutchinson \$25.00 for the idea of his perforated honey-board. I have also given friend Heddon \$100.00 for the privilege of advertising his hives; and I have agreed to furnish them at his prices—no less. If I understand it, friend Heddon is willing that all should make his arrangements for their own use, but he does not want any persons to advertise "Heddon's hives and fixtures" unless they make some arrangement with him, as I have done, for the privilege of so doing. This is certainly no more than just and right; and any bee-keeper who says in his catalogue or price list that he will furnish "Heddon's hives and fixtures," without making an arrangement with friend Heddon, ought to be publicly held up. I told friend H. that, if he preferred, I would not make any of his things at all, or that, if agreeable to him, I would give him \$100 for the above privilege. Another thing, friend H. is to fix the price on his own goods. If he charges more for them than you think they can be made for, it will leave you a margin for very nice workmanship, and I do not believe anybody will feel hurt if you do this.

A great quantity of inventions are being sent in to me daily, and sometimes some of the friends talk hard because I do not think as much of their inventions as they do. Please remember, I agree to buy only what I want, or what I think I want. If I am dull, or stand in my own light, it is my privilege to be and do so. All I agree to do is this: Whatever you send me that I make use of, I am willing to pay for.

NOTES AND QUERIES.

FROM 29 TO 54, AND 300 LBS. OF HONEY.

I PLACED 38 colonies and 3 nuclei in cellar; they are all right. I commenced last year with 29; increased to 54, mostly natural swarming; lost 3 in the fall, drone-breeder; sold 3, and brimstoned 30. I offered them for the value of hives and honey, but could find no purchaser. I extracted about 3000 lbs. box honey, 125 full ones, and 64 more or less full; extracted 34 lbs. of wax from cappings.

Recapitulation: In the spring of 1882, began with 4 box hives; have now 38 colonies, 3 nuclei, and about 500 spare frames, the greater part built on foundation. Thanks to GLEANINGS.

Milwaukee, Wis., Jan. 2, 1885.

R. BRUNN.

[It seems to me, friend B., you could have found a purchaser by advertising a little. I may be mistaken, however. Brimstoning 30 colonies seems to me to be a pretty saluting report in this line of progress.]

THE HONEY-PEAS.

I got three pints of honey-peas from the five-cent package of seed you sent me. I did not see any bees at work on the blossoms. S. H. HUGH.

Saybrook, Ohio, Nov. 19, 1884.

[Perhaps your plat was too small, friend H., for the bees to find them. Ours made a magnificent growth of foliage, but "nary a blossom," although they had the whole season to get at it.]

AGE OF DRONES.

How old must drones be before they are capable of fertilizing a queen? J. G. SHARP.

Rocksidge, Can., Jan. 12, 1885.

[If I am correct, friend S., they need to be only old enough to fly outdoors, and they usually take their flight at the same time the young workers do, so far as I have observed—say when they are two or three weeks old.]

MAKING SHEETS OF FDN. WITH A WOODEN WHEEL.

On page 56, Feb., 1880, you dip sheets of wax "very thin and even" "to the best advantage with a wooden wheel about 2 ft. in diameter." Why not use such a "wheel" altogether, instead of dipping-boards? IMKER.

Philipsburg, Can., Jan. 14, 1885.

[Friend I., we abandoned it because it was, like a thousand other things, "too much machinery." The sheets were too long to handle easily, and the girls with the dipping-boards would run right away from the wheel. I believe the wheel has been universally abandoned, unless by our friends Vandusen, of Sprout Brook, N. Y., who make the flat-bottomed fdn.]

CIRCULARS RECEIVED.

A 4-page circular from C. L. Brooks, Deansville, N. Y.; supplies generally.

M. S. West, Flint, Mich., sends out a one-page circular of Simplicity hives and L. Frames.

A 4-page circular from Miss Alice Fisher, Anna City, Ill. Poetry. Printed at this office.

A 20-page price list from F. A. Snell, Milledgeville, Ill. Specialties, the Eclipse bee-hive, Italian bees, queens, etc.

A 20-page circular from E. Armstrong, Jerseyville, Ill. Specialties, Standard Crown bee-hive, and bee-supplies generally.

J. M. Killough & Co., San Marcos, Texas, send out an 8-page circular, printed at this office; specialties, bees, queens, and supplies generally.

A 3-page price list from J. C. Newman & Son, Peoria, N. Y. Specialties, sections to nail, separators, section honey-racks, and Bingham smokers.

An 8-page price list from F. L. Dougherty, successor to Dougherty & McKee, Indianapolis, Ind. Specialties, bees and hives, and other supplies.

A 16-page price list, M. Richardson, Port Colborne, Ont. This circular contains much valuable information; gives the cut of one-story chair hive, and Canadian supplies generally.

An 8-page circular from Dr. S. F. Haskins, Hudson, Mass. Specialties, poultry, Italian bees, and Simplicity hives. This circular folds up into a sort of envelope, and has a picture of an incubator on the outside.

G. B. Lewis & Co. send out a nice new circular, reduced prices on hives and sections, and quite a lot of new "pictures." So many of the pictures in our price list have got to be so old and stereotyped that something a little new is refreshing.

D. A. Jones sends out a 32-page price list—lots of pictures, and much valuable matter. Friend J. is up to the times every time, you may be sure. He has a little book on foul brood, its management and cure. In the latter part of his circular are terms to students in bee culture.

Watson & Thell, Brooklyn, N. Y., send out a circular that looks a little as if they were not well posted in regard to modern bee culture. Prices of hives, \$50.00 a pair, etc. They quote "M. Quinsby" quite a little, and father Langstroth, who might lead one to think his work was in harmony with Langstroth and Quinsby. Perhaps they have always lived in the city, and are not posted.

A. C. Kendel, Cleveland, O., sends us his annual 32-page price list of seeds, etc. On the last leaf he mentions hives and beekeepers' supplies; and clear down in the last corner he gives prices of German carp for stocking ponds. Prices are from \$7.00 per 100 to \$1.00 per dozen. Friend Kendel has been the means of selling a good deal of honey for many of the brethren, and we think you will find him a nice man to deal with in every shape and manner. By the way, friend K.'s circular is quite instructive in a good many ways. For instance, under the head of "birds" we find ant-eggs, \$1.00 a pound; fish for gold fish, 10 cts. per box; bird lime for catching birds, 20 cts. a box; and last of all, meal worms, 25 cts. per 100. May be friend K. would like to be stuck up on the latter.

Our old friend Oliver Foster, Mt. Vernon, Ia., sends out a very pretty circular, printed at his office; specialties, bees in the U. S., and melted wax tin machinery. Friend F. offers a round of bees in April for 30 cts.; the same in July for 50 cts. Now, at these extremely low prices his bees ought to be all bought up, even before he gets started. I shall be very glad if he can stand the rush of business at these prices, but it seems to me he will have to give it up. His circular contains much valuable matter, and is worth sending for. I should say it was a pretty expensive business, selling a round of bees in April for \$2.00, let alone offering them for 30 cts.; but friend Foster is good for all he agrees to do, I believe, so those who give him their orders before he says "hold on" will be the lucky ones.

CONVENTION NOTICES.

The second annual picnic of the Northern Michigan Bee-keepers' Society will be held at the apiary of F. A. Palmer, near McBride, the last Thursday in May, 1885. F. A. PALMER, Sec.

The Bee-keepers' Association of Hamilton and Tipton Counties, Ind., will hold its next meeting at Cicero, Hamilton Co., on Friday, Feb. 6, 1885. JNO. FRITZ, Sec. D. AMING, Pres.

THE NORTH-AMERICAN BEE-KEEPERS' ASSOCIATION. The executive committee of this association have decided to hold the next annual meeting at Detroit, Mich., on the 8th, 9th, and 10th of Dec., 1885. If there is any reason why this date is undesirable, it should at once be made known, that the committee may be governed accordingly. W. Z. HUTCHINSON, Sec. L. C. ROOT, Pres.

The Ohio bee-keepers will hold their annual convention in the agricultural rooms, State-house, Columbus, O., Feb. 17, 1885, where all subjects pertaining to apiculture will be discussed. All interested are invited. We hope that all county and district organizations will send representatives, for the purpose of making a permanent State organization. Can you make it convenient to attend, and deliver us a lecture? I hope you will not say no. C. M. KINGSBURY.

[Friend K., I am very much obliged indeed to you, but it will be impossible for me to get away from home for two weeks in succession, even if I were competent to deliver a lecture anywhere or to anybody. I expect to leave on Monday, the 23d, for New Orleans.]

THE NORTHEASTERN MICHIGAN BEE-KEEPERS' ASSOCIATION.

Will hold its third annual convention on Wednesday, Feb. 4, 1885, in the Opera Hall, at Vassar. No local society has better meetings than the N. E. Mich. President Taylor has visited New Orleans, and will probably be able to give an interesting account of the apianian department of the Exposition. Reduced hotel rates. Those going on the cars will please write for railroad certificates and secure reduced rates. W. Z. HUTCHINSON, Sec.

NOTES FOR BEE-KEEPERS WHO INTEND GOING TO THE CONVENTION AT NEW ORLEANS, FEB. 24, 25, AND 26.

The convention will assemble at 10 o'clock A. M., in the Lecture Hall on the Exposition grounds. Among the subjects that will be considered during the sessions of the convention will be reports of the honey resources and productions of America and Europe; preparation of honey for market; transportation; lower rates of freight for it; marketing; the advantages of foundation; sections; the best size and best way to use; the best race of bees for America; prevention of swarming; fertilization of queens; artificial pasturage; bee-keeping as a pursuit; besides, the discussion of other questions of interest that will be propounded during the convention.

Essays to elicit discussion are expected from some of the most prominent bee-keepers of Europe and America.

Bees and supplies to exhibit must be sent with all freight prepaid, and directed to Maj. E. A. Burke, Director-General of Exposition, for Department of Agriculture, New Orleans, La.

The Board of Management of the Exposition have established a Department of Information and Accommodation at Nos. 164 Cravier and 15 Union Streets, for the purpose of furnishing visitors with information as to suitable board and lodging-houses, or furnished rooms, with directions how to reach them. For such service no charge is made. Bee-keepers, on arrival in the city, are advised to go at once to the office of this department and make the best arrangements they can for quarters; and if they will leave their cards and address at the same place, their friends will know where to find them. Most of the visitors at the Exposition find it best and cheapest to rent rooms, and take their meals at the restaurants. Furnished rooms will cost from 75 cts. to \$1.00 per day for each person; and if board is added, the rate will be about double. We are assured that the hotels have not advanced their charges. The rates are from \$2.00 to \$3.00 per day, according to location of room, etc.

Signed by the bee-keepers issuing the call for convention. See page 858, Dec., 1884.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,
EDITOR AND PUBLISHER.
MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, FEB. 1, 1885.

Wherefore do ye spend money for that which is not bread?
and your labor for that which satisfieth not.—Isa. 55:2.

RUSSIA BASSWOODS.

FRIEND F. L. Wright intimates in some of the bee-papers, that the extravagant claims made just now for Russia basswoods originated with the party interested in propagating the trees. May be we had better wait a little until somebody has Russia basswoods blooming in our own country, before we invest largely.

ANOTHER WEEKLY BEE-JOURNAL.

FRIENDS Scoville & Pond have started a weekly bee-journal, at a dollar a year. As they did not issue their monthly promptly, I hope they will excuse us for having a little misgiving about their being able to manipulate a weekly so as to have it come out promptly on time, for so very small a sum. It is to their credit, however, that they have given us four or five numbers, any way, on time and in good shape. We extend to them our best wishes.

BEE-KEEPERS' BADGES FOR THE EXPOSITION AT NEW ORLEANS.

We can furnish a badge with a golden bee, and the words "International Bee-keepers' Congress," plainly printed, for 10 cts. Sent by mail on receipt of price. I expect to be in Cincinnati on Monday evening, Feb. 23d, according to the instructions on page 85. I shall be at the Louisville & Nashville Railroad depot with my badge on, and all that are on hand with their badges will probably have no trouble in finding our crowd.

ICE AS WELL AS CARP.

THIS 22d day of January we are having fun cutting ice from one end of our carp-pond, furthest away from the deep places where the fishes hibernate. The blocks are almost as clear as glass, and 9½ inches thick. We made a wooden frame that goes into our refrigerator in the lunch-room, and the blocks are made so as to fit this, so a solid lump can be put in each time, thus avoiding chipping up the ice, which makes it waste badly, and saving time as well. We store the ice in an unused shed, by putting in some studding and an extra lining, and then putting in sawdust so as to have 18 inches or 2 feet between the walls, all around the ice.

CALIFORNIA MOUNTAIN SAGE.

WE are again told that our specimen of the mountain sage shown in the A B C book "ain't right." A specimen was sent us when the A B C book was first started, and from it we had made an expensive engraving. After a while friend Pryall said it wasn't correct—it wasn't mountain sage at all, but some other kind. To be sure we were right we went to the expense of more engravings, and now friend J.

P. Israel, in the January Magazine, says they "ain't right." Well, friends, I begin to feel as Dr. Franklin did when they told him his ax was ground only enough to be "speckled." He replied, "Well, on the whole I think I like a speckled ax best." When the doctors will agree for a year or two what specimen of the mountain sage is genuine, we will, if necessary, go to the expense of more engravings.

COMPLICATIONS IN BUSINESS.

SINCE writing the article in another column on this subject, I have noticed in two of our bee-journals an offer of premiums to every tenth subscriber, or something like that. This will not only result in complications, but it offers something to a small part of the subscribers that the larger part does not get. If the friends will excuse the liberty I take, I would suggest that past experience has been pretty strongly against any thing of this kind. I have watched it for many years, and especially among bee-journals have such ventures been unfortunate. Another thing, it borders closely on the lottery business. The tenth man who gets a swarm of bees, or whatever it may be, renders no sort of an equivalent for them; he is simply a lucky man, because he has drawn the prize. Any sort of an inducement to get people to subscribe, aside from the old orthodox way of getting them to invest because of the intrinsic worth of the journal itself (shown on its reading pages) sooner or later seems to have met with reverse rather than success. Paying the one who takes the journal to go around and solicit subscriptions is, of course, another thing, for that is a regular channel of business. The agent receives pay for explaining and selling goods.

PUT UP YOUR GOODS IN GOOD STYLE.

SEED catalogues, and catalogues of small-fruit plants, etc., are getting to be amazingly thick nowadays, but the number of dealers who put up things in nice shape, and do all they agree to, and a little more, is not so very large, after all. Last July my attention was attracted to a vender of cabbage plants, who said he could put them up so nicely they would go anywhere, and with the instructions sent with them they could be planted safely just as well in dry weather as when it was rainy. This latter consideration was what mainly induced me to send to him. The plants came wrapped up in an old spool-box, and said box looked as if the baby had had it for a week or two for a plaything, before it was used to mail plants. The plants were badly wilted, and I could not see that they were packed at all. If any directions were ever sent to tell how to make them grow in dry weather, I never saw them. Soon after I sent for strawberries to A. T. Cook, Clinton Hollow, Dutchess Co., N. Y., whose catalogue was noticed in a late issue. The plants came packed in a new wooden box, so pretty that it was a wonderment all around. When the box was opened, a neat slip of paper, nicely printed, gave explicit directions for putting the plants out, and the plants themselves looked so fresh and handsome that almost anybody would have gladly taken the package off my hands at cost. May be friend Cook did this because he was sending to an editor, and perhaps he knew my weakness for nice things nicely put up. Any way, if he always puts up his stuff in that way, I shall expect him to build up a great business. You can tell by sending a trial order, or sending for one of his nice little catalogues, of which we have just shipped him 10,000.

Oldroyd's National Black Ink.

These inks have been sent to over twenty States in this Canon, besides Canada, India, and Asia. Rev. Samuel G. McFarland, Superintendent of Government Schools in Siam, Asia, says he has used them a great while, and likes them better than any he has ever tried. A. I. Root, of Medina, Ohio, editor and publisher of GLEANINGS IN BEE CULTURE, says he has tested and sold thousands of bottles of Oldroyd's inks, and has sold thousands of bottles of others, but Oldroyd's excel all others as a writing ink. They are not injured by freezing, and will not corrode a pen. Black ink will stand any weather. A package in powders, sufficient for one pint of either black, blue, violet, green, or red, sent free to any part of the United States upon receipt of fifteen cents.

EIGHT PACKAGES, - - - \$1.00.

FIVE DOZEN PACKAGES, - - \$5.00.

Simply add one pint of pure rain water. If too thick at any time, reduce with water.

The blue ink and my bluing are one and the same, the pint of bluing making as much as 4 bottles.

COLUMBUS, O., JULY 3, 1884.

Wm. Oldroyd, Dear Sir:—If you only knew it, and would introduce your ink to the American public, you have a sure fortune. Without exception it is the best I ever used, and I have used and sold a great deal of it in the last forty years.

Yours truly,

HARVEY BANCROFT,
Fire Insurance Agent.

Manufactured by **WM. OLDROYD,**
Columbus, Ohio.

If more convenient, we will fill orders at above prices. A. I. ROOT.

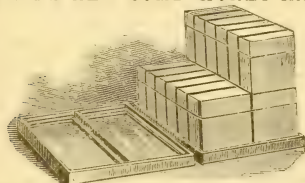
BUCK & SWALLOW,

Manufacturers of and Dealers in
APIARIAN SUPPLIES,
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Sample by mail, already nailed, 16 cents. Racks alone by freight, nailed, per quantity, 10c per rack. Send for circular and full price list. Address:
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Can furnish just as neat, white, smooth, and perfect dovetailed white-poplar sections as there are made. Send for sample and prices. 3Td

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With or without a bee-space. White-poplar nailed sections. Given foundation, etc. Wax worked at 10 and 12 cts. per lb. English Rabbits. Send for price list to
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Or. MANUAL OF THE APIARY.

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More than 50 pages, and more than 50 fine illustrations were added in the 8th edition. The whole work has been thoroughly revised, and contains the very latest in respect to bee-keeping. It is certainly the fullest and most scientific work treating of bees in the World. Price, by mail, \$1.25. Liberal discount to dealers and to clubs.

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DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column.

IMPORTED QUEENS.

In April, - - - - -	11 frames in gold.
May and June, - - - - -	10 " " "
July and August, - - - - -	9 " " "
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No order received for less than 8 queens. Queens which die in transit will be replaced only if sent back in a letter. CHARLES BIANCONINI & CO.,
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ITALIAN QUEENS.

We are preparing to send out untested queens as good as the best in the market. Their mothers were imported by us in 1884, and tested during the fall. They prove prolific in the extreme, and are superior honey-gatherers.

Untested, \$1.00; tested, \$2.00; best tested, \$3.00; tested, old stock, 1884 queens, \$1.50.

Nuclei, untested queens, 2 L. frames, \$2.50; 3 L. frames, \$3.00. Add \$1.00 for tested. Dealers will please write for satisfactory dozen rates. Safe arrival guaranteed. J. W. K. SHAW & CO.,
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HIVES, SECTIONS, AND APIARIAN SUPPLIES OF ALL KINDS.

COMB FOUNDATION A SPECIALTY.

Italian bees by the colony or nucleus. Extractors to hold L. or Simplicity frames, for \$6.50. Saw-mandrels for hive making, with babbitted boxes, all turned in good order, 27 inches long, for \$6.00. All supplies very low, by wholesale and retail. Send for circular. E. Y. PERKINS,
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100 Colonies of Italian Bees.

AND 100 TESTED ITALIAN QUEENS, FOR SALE.

For particulars and prices address

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TWENTY-FIFTH

ANNUAL CATALOGUE & PRICE LIST NOW READY.

Full Colonies, Nucleus Colonies, and Queens,
From Our New Strains; Also General
List of Apiarian Supplies.

Consisting of Bee-Hives, white-poplar Sections,
Comb Foundation, etc.

Write your name and address plainly on a postal, and get my prices before ordering your supplies.

Address **Wm. W. CARY, Jr.,**
Coleraine, Mass.
3tdb Successor to Wm. W. Cary & Son.

Bee-Hives AND Sections!

NEW SHOP AND NEW MACHINERY.

The Largest Manufacturer of Bee-Hives, Sections, etc., in the World.

Our Capacity now is a Carload of Goods Daily.

DECIDED.

The courts have decided the patent on the One-Piece Section to be null and void, for want of novelty. We are now manufacturing them again as first placed on the market by Lewis & Parks.

Write for our new price list for 1885.

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A 1½ H. P. wrought-iron tubular boiler and engine, in working order. Price on cars, \$115.00.

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We have remodeled our machinery, and can fill orders on short notice. If wanted, odd sizes made. Send orders now before the rush comes. We have a large stock on hand now. We give 3 per cent discount till Feb. 1. Price list free.

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REVERSIBLE-FRAME HIVES.
WHITE BASSWOOD AND POPLAR SECTIONS.

Send for Circular.

O. J. HETHERINGTON, EAST CAGINAW, MICHIGAN.
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Established 1855.

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We have constantly on hand a large stock of Domestic, Imported, and Refined Beeswax in original shape, which we offer to manufacturers of Comb Foundation at lowest prices. Write to us for prices, stating quantity wanted. Address

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Beeswax Bleachers & Refiners.

SYRACUSE, N. Y.

N. B.—We have low freight rates to all points on quantities.

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HONEY-EXTRACTOR,

SQUARE GLASS HONEY-JARS,

TIN BUCKETS, BEE-HIVES,

HONEY-SECTIONS, &c., &c.

Apply to CHAS. F. MUTH, CINCINNATI, O.

P. S.—Send 10-cent stamp for "Practical Hints to Bee-Keepers."

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Our New Shop Completed, and Machinery at Work.

We claim the best facilities for furnishing supplies in the South-East. Our Factory will be equipped with the best and latest improved machinery, which will enable us to furnish our goods up to the times, and we will furnish all kinds at very reasonable prices. Parties needing supplies would do well to see our prices before buying.

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The Albinoes Ahead, and We Make a Specialty of Them.

Those who wish early queens should order early, as orders must be filled in rotation.

For prices, address

S. VALENTINE & SON,

HAGERSTOWN, MD.

3d

IF YOU WANT

A GOOD ONE-PIECE SECTION CHEAP.

Send to us. Sample and Price List Free.

SMITH & SMITH, KENTON, HARDIN CO., OHIO.
21fd

Something New.

Hive with reversible section cases, also Simplicity Hives, the same as A. I. Root makes them, at Root's prices. Send for circular and price list to

11fd

KENNEDY & LEAHY,

Box 11. Higginsville, Lafayette Co., Mo.

BEE-HIVES,
ONE-PIECE SECTIONS,
COMB FOUNDATION,
—AND—
Bee-Keepers' Supplies Generally.
Price List Sent Free.

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Lyndon, Whiteside Co., Ill.

Basswood-Trees.

Basswood-trees 1 to 3 feet high, - - - \$1.50 per 100
Hard-maple trees, 3 to 5 feet high, - - - 1.50 per 100
Mountain-ash, ornamental, 3 to 5 feet, 10 cts. apiece.
Address HENRY WORTH,
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1885

ITALIAN QUEENS.

1885

6 WARRANTED QUEENS FOR \$6.00.

Write for Circular.

11fd

J. T. WILSON,
NICHOLASVILLE, KY.

BE SURE

To send a postal card for our illustrated catalogue of APIARIAN Before purchasing SUPPLIES elsewhere. It contains illustrations and descriptions of every thing new and desirable in an apiary.

AT THE LOWEST PRICES.

ITALIAN QUEENS AND BEES.

J. C. SAYLES,

1-12db

Hartford, Washington Co., Wis.

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The Only Steam Factory Erected in the South.

Exclusively for the Manufacture of Hives.

Frames, Sections, &c., &c.

Viallon, and Root Simplicity Hives, and the 4½x4½ all-in-one-piece Sections a specialty.

Comb Foundation made on the Root and Dunham mill, of pure wax, and worked on shares.

Extractors, Smokers, Honey - Knives, Bee-Veils, and every thing needed in the apiary.

Italian Queens and Bees. No other races in my apiary or in the neighborhood. The superiority of the queens reared in my apiary is so well established, that no commendation is required. I send out no queen that I would not have for myself; and any one receiving a defective or worthless queen from me will have it replaced. Proposals from Dealers to mail a given number weekly, solicited.

Untested Queens in April, \$1.25; in May, \$1.15; in June and after, \$1.00. Rates per dozen given on application.

TESTED QUEENS from March 1st to July 1st, \$2.50; and after, \$2.00.

SELECTED TESTED QUEENS. Reared previous season, to breed from, \$3.00. All my queens are reared from selected imported mothers of my own importation, and from selected daughters.

Early 4-Frame Nucleus. With tested queen, \$5.00. I have made a specialty of the 4-frame nucleus for the last seven years, and have sent them out to all parts of the United States and Canada without loss.

Every Nucleus I send out contains at least three pounds of bees when received and sent out in the full-size Langstroth frame. They are cheaper and more advantageous than bees by the pound. Any one wishing a list of those to whom I sent nuclei the last season can have it on application, so they can inquire what they were, etc.

Full Colonies In any quantity. Perfect satisfaction guaranteed in every instance. For more particulars, and prices, send for my Descriptive Illustrated Catalogue. Cash market price for wax.

P. L. VIALLON,
Bayou Goula, Iberville Parish, La

DADANT'S FOUNDATION

is asserted by hundreds of practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sag, most regular in color, evenest, and neatest, of any that is made.

It is kept for sale by Messrs. A. H. Newman, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; Dougherty & McKee, Indianapolis, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Ezra Baer, Dixon, Lee Co., Ill.; E. S. Armstrong, Jerseyville, Ill.; H. Drum, Adelphi, O.; Arthur Todd, Germantown, Philadelphia, Pa.; E. Kretzmer, Coburg, Iowa; E. F. Smith, Smyrna, N. Y.; C. T. Dale, Mortonsville, Ky.; and numerous other dealers.

Write for samples free, and price list of supplies, accompanied with 150 Complimentary and unsolicited testimonials, from as many bee-keepers, in 1883. We guarantee every inch of our foundation equal to sample in every respect.

CHAS. DADANT & SON,
31stfd Hamilton, Hancock Co., Illinois.

Oldest Bee Paper in America—Established in 1861.

AMERICAN BEE JOURNAL,
WEEKLY, at \$2.00 a year.
MONTHLY EDITION, 16 pages, 50c. a year.
925 West Madison Street, Chicago, Ill.

RED-CLOVER BEES and QUEENS

If you want Italian Bees that will work on red clover, and that are gentle to handle, you can get them of me. Send for my circular. It tells you how to successfully introduce queens, and of the Safety Introducing and Shipping Queen-Cage.

Address

F. BOOMHOWER,
1tfd Gallupville, Schoharie Co., N. Y.

JOB LOT OF WIRE CLOTH AT GREATLY REDUCED PRICES.

Such a brisk demand has sprung up for this, and our customers seem to be so much pleased with the goods, we have succeeded in getting another still larger lot, of one of the largest manufacturers of wire cloth in the world. Please bear in mind that the only way in which we can afford to sell it at the very low price of 1½ cts. per sq. ft. is by selling the entire remnant just as it is put up. We have now in stock the following pieces. As fast as it is sold, each piece is crossed out, and the next issue will show what remains.

Width, 8 inches.—3 rolls, containing respectively 50, 50, and 60 square feet.

Width, 10 inches.—4 rolls, containing respectively 72, 70, 65, and 75 square feet.

Width, 11 inches.—One roll, containing 80 square feet.

Width, 12 inches.—5 rolls, containing respectively, 80, 100, 90, 90, and 100 square feet.

Width, 14 inches.—1 roll, containing 116 square feet.

Width, 16 inches.—1 roll, containing 139 square feet.

Width, 20 inches.—1 roll, containing 150 square feet.

Width, 22 inches.—2 rolls, containing respectively, 250, and 180 square feet.

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Width, 36 inches.—10 rolls, containing respectively, 69, 216, 290, 210, 300, 315, 216, 65, and 201 square feet.

Width, 27 inches.—One roll, containing 23 square feet.

Width, 28 inches.—10 rolls, containing respectively, 58, 150, 116, 200, 115, 40, 230, 230, 190, and 264 square feet.

Width, 30 inches.—4 rolls, containing respectively, 110, 25, 90, and 120 square feet.

Width, 32 inches.—4 rolls, containing respectively, 150, 172, 41, and 133 square feet.

Width, 36 inches.—6 rolls, containing respectively, 160, 270, 200, 150, 130, and 120 square feet.

Width, 38 inches.—5 rolls, containing respectively, 75, 316, 300, 290, and 316 square feet.

Width, 40 inches.—5 rolls, containing respectively, 300, 275, 320, 166, and 125 square feet.

Width, 42 inches.—One roll, containing 245 square feet.

A. I. ROOT, Medina, Ohio.

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Obituary.

WE are pained to be obliged to chronicle the death of our old friend W. W. Cary. He was for years an intimate friend of L. L. Langstroth, and during Mr. L.'s visit to us he had a good deal to say of his most highly esteemed friend Mr. Cary. We learn by the *Bee-Keepers' Magazine* of Jan. 1 that he has been a bee-keeper for 52 years. He made the acquaintance of Mr. Langstroth in 1850; and when the Italian bee first made its advent to our shores, Mr. Cary was one of the most active in giving it a chance, and he has furnished nice Italian queens for perhaps as long a time as any American bee-keeper. The magazine above mentioned contains an excellent portrait of our friend Cary, together with a biographical sketch of his life. Although many may not know it, our bee-keepers' medley contains an engraving of friend Cary. While getting it up, Mr. Langstroth remarked to me that many for years have noted the resemblance between Samuel Wagner and W. W. Cary, and that a photograph of one would answer for the other. Accordingly friend Cary's photograph was given, with the above explanation, as no photograph was ever taken of Samuel Wagner. Mr. Cary's business will be carried on, and, in fact, has been for some time carried on, by his son, W. W. Cary, Jr.

DIED—In Baltimore, Md., Jan. 23, 1885, Elenora, only and beloved daughter of C. H. and Susan H. Lake, aged 12 years, 2 months, 6 days.

KIND WORDS FROM OUR CUSTOMERS.

Thanks for your kindness in waiting so patiently on me. The goods I ordered at different times were all received with the best of satisfaction, especially the bee-keeper's wheelbarrow, which has been faithfully used by myself, wife, and children.

D. N. LANBERT.

Logan, Kent Co., Mich., Oct. 27, 1884.

Please find \$2.60, for which send me the latest edition of the A B C book, and GLEANINGS for 1885. I can't think of doing without them, and keep bees and make a success of it, for I think one may lose ten times the cost of both, in trying to do without. GLEANINGS is always welcome in our home.

G. A. WILLIS.

Enfield, White Co., Ill., Dec. 15, 1884.

We subscribed for GLEANINGS last year, and like it much; but having been unfortunate with our bees, we lost our enthusiasm and did not resubscribe. Had I the time I could say much of my admiration of your way of conducting business. I will just take time to say, it reminds me of a thrifty bee-hive. To a bee-man, that expresses much of order, industry, happiness, and profit.

If you choose you can send some cards for dis-

tribution, as I am teaching in the country, and have a good many boys in charge, ages from eight to eighteen, and I think they would appreciate them.

Russ, Tex., Nov. 11, 1884. Mrs. M. TALIAFERRO.

SOME KIND WORDS, AND NO MISTAKE ABOUT IT.

The goods came all O. K. Many thanks. The carpet-sweeper, my wife thinks, is the nicest thing out, and I think "How the Farm Pays" is something that every farmer ought to have, and every young man who intends to be a farmer, or even if he doesn't ever intend to be one. He may become the owner of a farm, and with what information he would get out of that he would know at a glance what kind of seed to sow to be the most profitable, and he also may know whether his tenant is competent to conduct a farm or not, and every thing pertaining to a farm, farm implements, etc. The book has paid me already in one article on grape culture. If I am a blacksmith and a bee-keeper also, the A B C book has paid me double and tenfold for itself, just in one point of dressing saws. Sometimes I could dress a saw, and it would saw well, and the next time it would hardly saw at all, and my neighbor was about to get all of my custom. But a glance at the article in the A B C turned the scale, so I dress from 3 to 5 saws every week, where, before I got the A B C, may be I would dress one a month. Somebody else would dress it the next time. But that is not the case now.

MY REPORT ON BEES.

This season was almost too dry; spring count, 11; sold six, and increased to 22, all alive at date. Honey very dark, and strong to taste—very bitter. Honey-dew was the cause.

Every household or family ought to take GLEANINGS, for the one heading, Our Homes, Myself and my Neighbors, and, in fact, every heading in it is worth tenfold the price of GLEANINGS for one year.

Waynesburg, Pa., Jan. 15, 1885. T. A. INGRAM.

[Why, my good friend I, it seems to me you must be unusually easy to get along with, or you would not be pleased at our humble efforts in every direction, as you seem to be in the above letter. I confess I am very glad indeed to find that our publications, and the goods we furnish, have been the means of doing you so much good in your home.]

SOMETHING NEW.

As I have greatly increased my facilities for manufacturing

Apiary Supplies,

It will be to your advantage to send for price list before purchasing elsewhere. Cash paid for bees-wax.

A. B. HOWE,
Council Bluffs, Iowa.

SECOND-HAND FOUNDATION MILLS.

We have at present four mills, which we have taken toward new ones. The first one is a 5½-inch Washburn mill; price, when new, \$20 or \$30—can't just remember now; but our present price for a 6-inch mill is \$15.00. We will sell the mill for \$10.00. The second one is a 9-inch mill, such as we used to make for the L. frame. We will sell this for \$17.00. The third one is a 10-inch mill, our own make. The present list price is \$25.00. We will sell it for \$18.00. The last one is a 12-inch mill, our own make. Present price of a new 12-inch mill, \$40.00. We will sell this for \$25.00. All the above mills have been worked over so as to make the new style of cell. Samples of the work will be sent on application. We will allow 5 per cent off from prices mentioned above, for cash with order.

A. I. BOOT, MEDINA, OHIO.

IMPORTED CARNIOLANS.

Grades and Prices of queens. Spring June J. & A. Fall
Finest Selected queens, each \$ 7.00 6.00 \$5.00 \$4.50
Fine Prides " " 6.00 5.00 4.50 4.00
Bred in Carniola. Safe arrival by mail guaranteed. Same prices for imported Italians. For circular, address Mrs. FRANK BENTON, Association, N. Y. Send greenbacks registered, draft, or postal-order to FRANK BENTON, MUSKOGEE, OKLAHOMA.

DADANT'S FOUNDATION FACTORY, WHOLE-SALE AND RETAIL. See advertisement in another column.

HONEY COLUMN.

CITY MARKETS.

KANSAS CITY.—*Honey.*—Our honey trade has been very large this year, but prices have ruled extremely low. We have tried our best to maintain prices, but the flood of California honey, both comb and extracted, and of extra fine quality at that, which has accumulated in the large markets all over the country, has compelled us to meet the competition. This has caused some dissatisfaction on the part of shippers who thought their honey should have brought more, but it is impossible to satisfy everybody. We are now short on choice 1-lb. sections, and would pay 14c per lb. for some white clover or basswood 1-lb. sections in glass front, clean new cases of not over 30 lbs. each. We could use 2000 to 5000 lbs. of it, and would pay cash on arrival.

JEROME TWICHELL, of

CLEVELAND, CLOON & CO.,

Jan. 22, 1885. Cor. 4th & Walnut St's., K. C., Mo.

ST. LOUIS.—*Honey.*—The cold weather has checked demand for honey. Comb neglected. Extracted, in barrels, Southern, worth 5½¢@6c. Northern, worth more, but slow sale. An occasional sale of 1 and 2 gallon cans at 10c. Choice white clover, 15¢@16c. in one-pound sections. Dark honey unsalable. *Beeswax* quiet at 26¢@30c. Stock small, and not much arriving.

W. T. ANDERSON & CO.,

Feb. 10, 1885. 101 N. Third St., St. Louis, Mo.

CLEVELAND.—*Honey.*—The honey market, like every other kind of merchandise, is very dull; sales during January were scarcely anything. February, so far, has been no better. Choice 1-lb. sections of white honey move slowly at 14¢@15c; 1½ and 2 lbs., 13¢@14c; second quality not wanted. Extracted in no demand. *Beeswax* scarce, 28¢@30c.

A. C. KENDEL,

Feb. 11, 1885. 115 Ontario St., Cleveland, O.

FOR SALE.—I have on hand 3 barrels of choice fall honey, which I hold at 8½c per lb. It was well ripened before extracting, and is put up in alcohol barrels.

H. W. FUNK, Bloomington, Ill.

FOR SALE.—One keg extracted clover honey, 110 lbs., for \$10.00.

M. ISBELL, Norwich, N. Y.

Russian White Oats

For Sale.

Single bushel.....	80c
Five bushels.....	75c
Ten bushels or over.....	70c
Sacks, each.....	20c

Put on board cars at directions of purchaser.

ALBERT L. MARTIN,

4-6d Leonardsburg, Delaware Co., O.

FRUIT, SHADE, AND HONEY.

Bee-keepers, please see my advertisement in GLEANINGS for Nov. 15, 1884, page 790, and order at once. Two dozen for \$1.00, postpaid. Address

4tfdb JNO. W. MARTIN, GREENWOOD DEPOT, VA.

1885 Colonies, Nuclei, and Queens, 1885

FOR SALE.

For terms, address 4-57-9d

1885 S. D. McLEAN, COLUMBIA, MAURY CO., TENNESSEE.

DADANT'S FOUNDATION FACTORY. Wholesale and retail. See advertisement in another column. 3btfdd

WANTED. Wax to work into foundation by the pound, or for a share. For particulars address

O. H. TOWNSEND, Alamo, Mich. 3-4d

Situation Wanted.

Adin Stone, Vienna, Onondaga Co., N. Y.

4tfdb

HEDDON'S

32-PAGE

CIRCULAR FOR 1885

NOW READY.

JAMES HEDDON, DOWAGIAC, MICH.

4tfdb

RASPBERRIES AND STRAWBERRIES FOR 1885.

Ohio, Souhegan, Tyler, Gregg, Cuthbert, Hansell, Crimson Beauty, Shafter's Colossal, Raspberries, James Vick, Manchester, Sharpless, Wilson, Crescent, Chas. Downing Strawberries, and many other varieties not mentioned here. PRICE LIST FREE.

4d EZRA G. SMITH, MANCHESTER, ONTARIO CO., N. Y.

BOOKING + ORDERS.

Why not buy your Queens and Bees direct from the breeder? 25 cents saved is 25 cents made. I am now booking orders for Queens and Bees, to be delivered in April, May, and June. Send for my new Price List. Address 4567d.

W. S. CAUTHEN,

PLEASANT HILL, LANCASTER COUNTY, SOUTH CAROLINA.

GEO. W. PUTNAM,

HOLLAND, GRUNDY COUNTY, IOWA,

Wishes to say that he will put up in packages, for one dollar, the following seeds for bee-keepers:

1 peck of Silverhull Buckwheat.....	35c
30 pounds Rape seed.....	40c
1 packet, ½ oz., Spider plant.....	10c
1 packet, ½ oz., Simpson plant.....	10c
Sack.....	5c

Will also sell or trade my house and two lots, blacksmith and wagon shop, with a good custom. Send postal card for price list of supplies, etc. 4-5d

SECTIONS!

Planed white basswood, dovetailed or to nail. Send for sample and price. New machinery and large experience enable us to give perfect satisfaction. Any size section made to order. Send sample of what you want. F. GRANGER & SON,

4-6d. HARFORD MILLS, CORTLAND CO., N. Y.

BEEES WANTED.

50 COLONIES of Bees, with combs built in Langstroth frames, for May delivery. 4d.

E. G. HOLLINGSHEAD, CULLODEN, ONTARIO, CANADA.

Wholesale and Retail.

BEE-KEEPERS' + SUPPLIES

Poplar and Basswood Sections a Specialty.

SEND 2-CENT STAMP FOR SAMPLE AND PRICE.

S. D. BUELL, UNION CITY, MICH.

2tfdb

HYDROMETERS FOR TESTING HONEY.

We have just succeeded in getting a beautiful little instrument, all of glass, that will indicate the density of honey or maple syrup, or any kind of syrup, by simply dropping it into the liquid. I am greatly surprised that we can furnish so beautiful an instrument for so small a sum of money. Price 35c. By mail, 10c extra. Per 10, \$3.00; per 100, \$25.00.

A. I. ROOT, MEDINA, OHIO.



Vol. XIII.

FEB. 15, 1885.

No. 4.

TERMS: \$1.00 PER ANNUM, IN ADVANCE; 2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00; 10 or more, 75 cts. each. Single Number, 5 cts. Additions to clubs may be made at club rates. Above are all to be sent TO ONE POSTOFFICE.

Established in 1873.

PUBLISHED SEMI-MONTHLY BY

A. I. ROOT, MEDINA, OHIO.

Clubs to different postoffices, NOT LESS than 90 cts. each. Sent postpaid, in the U. S. and Canada. To all other countries of the Universal Postal Union, 18c per year extra. To all countries NOT of the U. P. U., 42c per year extra.

HEDDON'S LETTER.

Moral Patents.

HEDDON'S HIVE, HONEY-BOARD, HONEY-PLANTS, &c.

ON first page of your last issue I find a letter from brother Hatch to brother Hutchinson, from which I gather the idea that brother Hatch thinks that our government sells a monopoly to a person when said person takes out a patent. I think he is in error. What we pay the office is record fees, and the monopoly is only a monopoly of the inventor's own discoveries; a monopoly of what he has produced by the labor of his own brain and hands; a monopoly of what did not exist before his efforts brought it into being. The office gives him the 17 years' exclusive right, charging only fees to support the recording and other office labor.

WIDTH AND SIZE OF ONE-POUND SECTIONS.

Brother Hatch also says, that in my "circular, page 20," I claim that the $4\frac{1}{4} \times 4\frac{1}{4} \times 7$ to-the-foot (or $1\frac{1}{2}$ scant) sections do not average one pound. He does not say whether he means my 1883 or 1885 circular. I can't find a word about it on page 20 of either circular. Neither can I find on any other page where I call that section a scant one-pound section, except when used with separators. Well, be that as it may, I have the fresh fact to state, that the past year we learned how to get this section so plumply filled, attached to the wood all around, that the part of our crop stored between separators, in this size section, averaged almost or quite exactly one pound per section, gross weight; that is, section and all. We can also average one pound with $1\frac{1}{2}$ -inch wide, $4\frac{1}{4} \times 4\frac{1}{4}$, when used without separa-

tors, if I recollect correctly. Regarding the system of management, I will give that at a future time.

PRICE OF CASES.

Brother Hatch says he could also furnish my cases at half my price, and make money. Has he seen my 1885 circular, where, on page 4, I quote these cases, in quantities of 26 or over, at 16c each? This includes handles and the five tin strips. I should like to buy of him at 8c each. No doubt he thinks he tells the truth. Does not much depend upon the quality of the material given? But suppose, for argument's sake, he could. Suppose he has the advantage of very cheap lumber and cheap power, and cheaper laborers. Must I, on that account, go entirely without any remuneration for my invention and introduction of this case? I infer that brother Hatch is a "Christian," and I think he should have seen these moral points sooner.

MOORE'S RACK.

This, I think, is properly named. I do not see that it is like, or fills the place of, my case. The tin strips at the bottom are not original with me. They are very old; so neither are the wood partitions. I claim them only in combination with a case that is to need no outside covering; that uses open-top sections; is bee-space taller than said sections, and adapted to the tiering-up plan (a splendid plan of manipulation), and taking the cover of the hive in the same manner that the brood-chamber does, and so arranged at the bottom as to be adjustable to the ordinary hive with bee-space above the frames, or my honey-board with bee-space in its upper side. Is brother Moore's like that? I think not. If so, it could not be made of material $2\frac{3}{4}$ inches wide, unless $2\frac{1}{4}$ -inch sections were used. I think that the difference in the popular growth between the rack

and the case is illustrative of their difference in construction. I don't think that brother Hutchinson, Cook, Sears, and a host of others, use a case or any thing else, just because I tell them to or ask them to.

HUTCHINSON'S HEDDON HONEY-BEARD.

I see you published my letter (by permission) on page 98. All right, only I don't see the clause wherein I said that brother H. did not claim the honey-board, only the queen-excluding feature. Did I put this sentence in the other part of my letter, or how? I know such to be the case; and as the letter reads, some might infer that I reflected upon brother H. in the matter, which is far from correct, as I place the highest confidence in his keenness of moral sense and vision, as well as the most sterling integrity in all his acts and speeches. Would that the world were all like brother H. Think of the comfort and economy!

Accept my thanks for your generous gift of \$100, which is thankfully received. I appreciate it, and will say I can't help but feel honored by your appreciation, after these years of toil. I am not done yet. A word about—

HONEY-PLANTS.

And I will close. I think we should avoid all plants not indigenous to our climate and soil, or readily adaptable to them. I am quite sure that *Epilobium*, or willow-herb, will not prove a success so far south as we are. I hope you will prove or disprove this statement. I can see no returns for labor, land, and seed, unless a plant is tough, generally sure of secretion, self-sustaining, and I am not sure but I may add, will thrive, spread, and increase in waste places, with only just starting. I know of no plants that combine these successful points except

MELILOT CLOVER AND PLEURISY-ROOT.

I have watched the latter closely for three years. It has never "shied" once, but every year is covered with bees all through basswood bloom, or that latter part of it which it laps on to. One great advantage that it has over melilot clover is, that it is a perennial plant. Another is, that it is a perfect success on the poorest soil. I am of the opinion that it might be made to settle the problem of reclaiming worn-out land, or land so poor that nothing else could be made to shade the ground till other fertilizers could get started. Melilot clover will back out of this poor soil. Try pleurisy-root, brother Root, and report. The plant that will grow well, and reclaim worn-out land, at the same time yielding a honey dividend, or take possession of grassy and weedy fence-corners, is what I want, and what I think I have.

JAMES HEDDON.

Dowagiac, Mich., Feb. 4, 1885.

We do not find the sentence you mention, friend H., and nothing was omitted from your communication, by mistake or otherwise. You may have put the sentence in some other letter.—In regard to the epilobium, you will see from our last issue, page 86, that it does flourish as far south as La Salle Co., Ill., and Medina Co., O., friend Green being just west of us. We will sow some of the pleurisy-root seed in the greenhouse to-day. It is noticed in GLEANINGS for Sept., 1880. Three reports are there given in regard to it. Its botanical name is *Asclepias Tuberosa*. Prof. Beal there describes it as follows:

The specimens sent are *Asclepias Tuberosa*,—But-

terfly-weed or Pleurisy-root. I have received it before as a bee plant. It is one of the milkweeds, and thrives in dry hill-sides and fields, but does not contain much milky juice. It is a very pretty plant, and is sometimes cultivated.

W. J. BEAL.

Michigan Agricultural College, Lansing, Mich.

Probably friend Hatch did not know you had advertised these cases at 16 cts. each, and very likely the Moore rack will answer his purpose; if so, he can, of course, advertise them at what price he chooses; but he would, to be sure, call them Moore's rack, instead of Heddon's.

SABBATH OBSERVANCE AND THE NEW-ORLEANS EXPOSITION.

WHAT SORT OF A STAND SHOULD A CHRISTIAN TAKE IN THE MATTER?

THE decision has been rendered, and the Sabbath-breakers have won the day! The New-Orleans Exposition is to be opened on the Sabbath, during the whole period of its continuance. Not only open, but special attractions are provided, and special privileges granted to induce a large attendance on that day. The conduct of the managers contrasts sharply with that of the directors of the Centennial, who firmly and persistently resisted the demands of the godless, to open the gates on the day of sacred rest. It is not only an outrage upon the moral sentiments of the best part of the nation, but a dethroning of Jehovah, and the consecration of his day to Mammon. This act deserves the severest rebuke from every God-fearing, Sabbath-loving citizen. The *Methodist Recorder* says:

Exhibitors who respect the Lord's day should utterly refuse to exhibit their goods on that day, or entirely withdraw from the Exposition; and religious people everywhere should decline to visit and patronize such a Sabbath-breaking institution.

Are not A. I. Root and myself included in the last sentence? Yes.

If the managers of the Exposition are determined to violate the Sabbath, religious people should with equal determination refuse in every way to countenance the desecration.

JOS. SOMERVILLE.

Brady's Bend, Pa., Feb. 4, 1885.

Friend S., I am very, very sorry to receive the above. On first reading your letter it seemed to me as if I could hardly attend a place of that kind, where no respect is paid to God's holy day; but after a little further reflection I concluded it was one of those questions that often come up, that every Christian ought to pray over before making a positive decision. I should not want to decide for others; but so far as I am concerned, I think it is my duty to go, all the same. Of course, I should not go on the grounds on Sunday, neither should I want any thing belonging to me open to inspection on the Sabbath-day. Of course, many perplexing questions come in. If the grounds and buildings are full of visitors, somebody must be there to look after the goods; and while there it would seem hardly courteous to refuse to explain things, and answer questions. It seems to me if I had any loose valuables there I would take them away Saturday night, and take them back Monday morning, if the regulations permitted it. If they did not, I would do one of two things: Withdraw all such loose valuables, or let

them remain, and take the risk of having them injured or stolen. I would not allow any possible inducement to persuade me to go on the grounds on the Sabbath-day, and take part in the proceedings. Something has been said about holding meetings on the Exposition grounds. From what experience I have had in holding meetings in similar circumstances and places, I do not believe it is advisable for any Christian to encourage them. There are plenty of comfortable churches in New Orleans, I am sure, and I feel pretty sure, too, that those who love the Lord will be found in those churches. Do not let us stay away, friends, but let us go, carrying Christ with us; and if we find customs different from our notions, let us strive to do as Paul did when he said,—

I am made all things to all men, that I might by all means save some. And this I do for the gospel's sake, that I might be partaker thereof with you. —I. COR. 9:22, 23.

WIND-BREAKS, THIEVES IN THE APIARY, AND HONEY-PRODUCING PLANTS.

FRIEND LAWSON TELLS US HOW TO KILL THE ABOVE THREE BIRDS WITH ONE STONE.

FRIEND ROOT:—In your issue of Jan. 1, 1885, in your answer to John F. Whitmore, concerning thieves in the apiary, you may well say the laborers are few, while the harvest is plenteous. We also have a promise to those who help themselves. Suppose we take this practical side of the case; that is, hedge in our apiary with something that will be a harvest for the bees twice in the year, a protection against thieves, a wind-break for the apiary, and a lasting pleasure to the owner. This is a subject of vital importance, not only to the apiarist, but to all who have inclosures to make, as this combines cheapness, strength, durability, and will be defensive against the inroads of men, stock, pigs, and rabbits, at all times. To such I would recommend the Japan quince; two varieties (*Cydonia Japonica*), scarlet flowering, and *Cydonia Japonica alba*, white flowering; also the *Pyracantha*. The two former have peculiar qualifications for the position I would assign them as a hedge. They have a rich, dark-green foliage, producing in April a profusion of flowers which keep the bees busy and happy (I have seen them in bloom as early as March, and snow lying on the ground). What could be more attractive? They are defended by innumerable thorns, which make them impenetrable against all interlopers; they thrive in all kinds of soil and locations; they will make a good defensive hedge in four or five years; bear pruning admirably, and are not subject to insect depredations, either in branch or root; and lastly, they occupy but two feet on either side of the row. Propagation of the above is similar to the *Pyracantha*, hence I will speak of them together.

The *pyracantha* is essentially a hedge-plant, which can not be said of many others, especially the Osage orange, which is, perhaps, the most familiar example to most of your readers, growing sometimes to a tree in height, with strong roots extending to either side for many feet, running so near the surface, and exhausting the soil, preventing the planting of crops to within several feet of the hedge-row. Not so with the *Pyracantha*; it requires

but two feet and a half on either side of the row; it is a beautiful evergreen, with a very rich dark-green foliage, producing, in June, snowy-white flowers, much frequented by the bees. In winter it has a profusion of red berries, making it very attractive. It is also defended by innumerable thick set thorns, making it impenetrable to all alike. Almost any kind of soil and location will suit it. Like the former spoken of, it grows rapidly, bears pruning admirably, and will be a defensive hedge in four or five years.

Propagation is effected by suckers and prunings of either hedges, cutting them up six inches in length. Have the ground spaded or plowed, and leveled off. Set a line; now strike the spade firm against it, and downward at the same stroke, deep enough to set the slips one inch below the surface. The object of this stroke is to make firm the soil against the line; set the slips six inches apart against the straight side; fill up to near the top of slips, press them in with the feet; fill up now one inch over their tops, leaving it mellow and level. This must be done not later than the middle of March. In the following fall lift them, and set them out 15 inches apart, alternating the plants as the work goes on, making it attractive all along the row, the flowering time of either being some three months apart. Prune them well in, after the fall of the leaf, so as to make them grow close and thick. The pyramidal form of training is to me the most practical, as a shower can get at the surface of every side-shoot, hence no dead limbs at the bottom.

I have been minute in detail, as the time for action is at hand, and perhaps many of your readers may have the above in their gardens or lawns as shrubs. They may go to work on them now. I have been a practical horticulturist and apiarist for some years, and have had the above hedges under my care; I would assuredly recommend them as worthy of consideration. With the help of a good gate and lock, it is what all apiarists need.

It is seldom I take the pen to write what I know, as my hand is more used to the pruning-shears; but should this effort do your readers some good, you may hear from me again. J. J. LAWSON.

Point Lookout Mt., Tenn.

Thank you, friend L. It is the men who are used to pruning-shears and such like implements, that we like to have send us articles like yours. Every apiary should have a wind-break of some kind, and we have at considerable expense planted evergreens all around ours. We did not think of the thieves nor the honey-posies when we did it. Now, while I do not much fear the thieves, I should be very glad indeed to have our evergreens bear flowers; but I did not know, until you mentioned it, that that could be managed. In regard to thieves, I believe it is seldom that they venture into an inclosure when it is surrounded by a hedge. It is a sort of uncomfortable predicament for a body to get into, and thieves are usually cowards. Who can furnish us plants for sale, and what are they worth? I have noticed the Japan quince, but I did not know before that it was a good hedge-plant. If I understand you, the quinces and evergreens are to be planted alternately. The effect, it seems to me, would be beautiful, and I do not see why it would not be just what we want—useful and ornamental.

LETTER FROM AN A B C SCHOLAR.

REVERSIBLE-FRAME DEVICE.

I SENT 20 cts. for GLEANINGS this month and next. I have received the January numbers, and have not been getting enough sleep since. They keep me reading very late at night, and then in the morning I read and shake this cold weather until the fire gets warm enough to thaw my boots, and I am convinced that I can not do without GLEANINGS, and do myself justice if I keep bees. Through the kindness of a friend I got a colony and a nucleus in 1893; but I read the ABC through twice, besides a lot of old GLEANINGS, and constructed a buzz-saw and made four Simplicity hives before I owned a bee. I caught the bee-fever from one of your old patrons. I still have the same enthusiasm that I started out with. I had one strong colony and three weak ones last spring; increased to 7, and took 140 lbs. of comb honey in your 1-lb. sections. The season was cut short by dry weather.

I started out to build up an apiary, and make it pay its own expenses for keeping. I have enough profit to run it next year. I more than doubled the money I invested. Bees are all right at present.

I will send you a reversible metal-corner frame I have been thinking about. R. F. STRAIN.

Spring Valley, O., Jan. 27, 1895.

Thanks, friend S., for your kind words. Your reversible corner is the Broers corner, mentioned in our back numbers. This makes three who have studied up exactly the same thing. Now, then, we have a great moral here. A common want has sprung up; intelligent minds have been at work at it, and after mature deliberation the wisest heads seem to center, as it were, around a certain point. In all such cases as this it is a comforting thought, that the best device will be brought out sooner or later, and these inventions are almost always like a honey-comb—the product of the united work of many individuals.

DESCRIPTION OF BOOMHOWER'S APIARY.

FOR CUT OF SAME, SEE PAGE 83.

FRIEND ROOT:—Had I thought that the picture of my apiary would have appeared so soon, I would have sent you a description of it in time to appear with the view. You have done pretty well in explaining the details, except that the picture was not taken in June. The view was taken the last of September. Only a small portion of the fertilizing hives are shown, having united the rest in full colonies for wintering. The artist has omitted a portion of a row of hives which should have been seen between the fence and the first row of hives at my right. The instrument you speak of is a frame-holder, only the artist has not got it quite right in the engraving.

I have been pretty much my own employer since I have kept bees. The past season I had some help from April until July; from July until I did all my own work. I have another apiary $2\frac{1}{2}$ miles out of the village; and as August is our main honey month, you can think how busy I must have been. I took care of both yards, and ran some on shares, 11 miles away, and did every bit of the work myself.

Some days I would visit my out yard twice a day, part of the time traveling the whole distance on foot. As an explanation why I went on foot part of the time, I will say that our minister has no horse; and when he wanted a horse to use he was at liberty to take the pony whenever he chose to have it.

My out apiary contains 85 colonies; my home apiary, 75 colonies. The product of my home yard the past season was nearly 2 tons of comb honey and about 500 queens, so you see I did not idle much time away. My home apiary has a hard coating of sawdust over its whole surface. Not a weed nor a spear of grass is allowed to grow anywhere near the hives. I have often offered the sum of 50 cts. for every spear of grass or weed that could be found within range of the bee hives. Over a ton of the comb honey from this yard was gathered from the common red clover. I sent you a sample of the honey. What do you think of it? When I purchased this place, three years ago, where the hives now stand was nothing but a thick hedge of old apple-trees and lilac, and other worthless bushes; in fact, one could not see from the window to the street; but the pick-ax and crowbar did the work pretty well, with me as their motive power. You know we are commanded to earn our bread by the sweat of our face. F. BOOMHOWER.

Gallupville, N. Y.

HEDDON'S HONEY-BOARD AND HIVE-COVER.

FURTHER PARTICULARS.

IN the cut given last month, page 85, which friend Heddon furnished, the cover is represented as a flat board, E. The friends may remember that I was a little tenacious of the opinion that such a cover would warp. When the hive came to hand, however, it transpired that the picture did not represent the cover at all. The cover friend H. sends us is shown below, at fig. 2. You will notice that, to prevent the warping I spoke of, he has put a piece of one-inch lumber, set up edgewise, on each end, and these pieces are fully as wide as the cleats around our Simplicity cover. To be sure, we can hold them from warping, if clamped in the above manner; but even if warping is prevented, the arrangement shown is not proof against twisting, and the sample hive furnished by friend H. had the cover so badly twisted when it reached us (I can not say how it was when he started it) that I would undertake to get robbers under it in less than half a day, in our apiary. Very likely such covers will work all right generally; but after four or five years of use, if they do not trouble by letting bees under during a severe dry spell, it will be contrary to all my experience. Another thing, this cover, with its great clamps on the ends, projects over the hive all around; and in shipping bees in a hive or otherwise, it would get knocked loose unless very securely nailed or screwed fast to the hive. A cover can be made on the plan of the Simplicity, just about as cheap, and I should very much prefer it; and if you can make bees push under a Simplicity cover so as to get robbing, I should like to see it done. The Simplicity cover also slips into place, and stays pretty securely. The above cover has no

place, but stays just where you lay it. Of course, all the friends can make covers as they think proper.

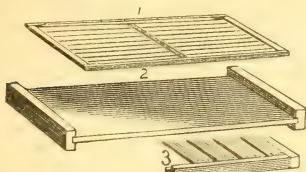


Fig. 1.—Slatted honey-board.

Fig. 2.—Hive-cover.

Fig. 3.—End of honey-board, showing how the slats are let in.

Figure 1 represents the slatted honey-board. The piece across the center is a piece of tin, to keep the spaces a little more accurate. The ends of the honey-board are rabbeted, so that the slats catch into the rabbet, as shown in figure 3. The honey-board is framed all around like a slate-frame, and this frame rises $\frac{1}{4}$ inch above the slats forming the bee-space. The pieces forming the sides of the frame are beveled off on the inside, so as to allow the bees to go up into the sections on the extreme outside. This honey-board, outside dimensions, is exactly the same as the top of the hive. The crate of section boxes is also the same, outside dimensions, so that hives, honey-boards, or crates of sections, can be piled up at liberty. No matter how you pile them, you always have the bee-space between them. The first bee-space is formed on the top of the hive, brood-frames coming $\frac{1}{4}$ below the outside edge of the hive. The honey-board, being flat on the under side, rests on these edges. The crate of sections is also flat on the under side; that is, the sections come down even with the lower edge of the crate; but on the top of the crate the sections are this bee-space below the outside edge of the crate.

If there is any thing more that is not fully understood in regard to Heddon's hive and system, I shall be happy to explain it.

A HINT FROM FRIEND FRADENBURG IN REGARD TO RABBITS.

AS a word of caution, I will suggest to you that, if you have not provided a suitable place for your doe rabbit to make a nest for young ones, that you do so at once, as she might be likely to have young at any time now; yet she may not before March or even April, and it would be a pity to lose the first litter for the want of a suitable nest. I have now five nests of young kids. If she is out of doors, I would suggest an old chaff hive would make an excellent nest-box, with a hole cut in one end to let the doe in and out; but whatever is fixed, the hole should be as near the ground as possible, or a banking of earth made up to the hole, for the little tads will come out sometimes, and not be able to get back, and so get chilled and die.

A. A. FRADENBURG.

Port Washington, O., Feb. 8, 1885.

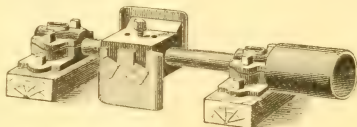
Thank you, Friend F. Our bunnies shall have a nice nest made forthwith. As they adjoin the Jersey cow's stable, I think we

will put the chaff hive in the stable, with the opening into the rabbit-pen; then, you see, when the bossy is covered up with that pile of leaves, the little "tads," as you call them, will be right in the same nest with "bossy."

OUR IMPROVED CUTTER-HEAD

FOR MAKING THE ENTRANCES TO SECTION BOXES, AND OTHER PURPOSES.

WE have formerly made our cutter-heads so that a pair of spurs were used in connection with the knife. These require frequent sharpening, and there is a difficulty in getting them adjusted so as to work exactly with the knife. The engraving below shows a knife bent at each side so as to form a spur on the edge of the knife itself, without necessitating a separate spur.



MACHINE FOR SCORING PLANK SO AS TO FORM ENTRANCES FOR THE BEES IN SECTION BOXES.

The above arrangement makes the whole machine plain, without much explanation. The mandrel is 18 inches long; pulley, $3\frac{1}{2}$ -inch face, and $2\frac{1}{2}$ inches in diameter; boxes, $2\frac{1}{2}$ inches wide. The head that holds the cutters is $2\frac{1}{2} \times 3\frac{1}{2}$. By loosening the bolts on the heads, cutters for different purposes may be attached.

A REPORT PARTLY ENCOURAGING AND PARTLY-DISOURAGING.

ORDERING GLASS AND ALL WHEN YOU ORDER CRATES, ETC.

I COMMENCED with 7 last spring; increased to 15 by natural swarms, and about 200 lbs. of nice comb honey, most of which is sold at 20c. per lb. The honey was in 1-lb. sections, and went like hot cakes. The next thing to do is to get goods for another year. First, send to an honest dealer, even if he is off a good way, and the freight is high; better do that than to buy of some one you don't know, and then not get any thing. Buy every thing that goes to make one piece or one article. For an example I will state my experience.

Early last fall I wanted some goods, so I sent to you. Goods came as I ordered, on short notice. Among the rest were some shipping-cases. To save expense of breaking the glass, I said leave it out. I expected to buy here as cheap as there; but when I came to buy, the dealer told me the glass would cost me 40c. per crate; so I just took glass for one, and thought that would do until I ordered again, and so it did; but, here is the result: I put the glassless crates in a room I supposed to be tight, but I suppose there must have been a nail-hole to start; and after a start was once made, no stop. The bees were almost as thick in the room as a swarm. I opened the door and window to drive them out; but in spite of Clark's smoker, muslin, needle, hammer, tacks, nails, strips of wood, and

every thing else but glass, they got twice as much honey as the glass would have cost, besides the fun of the stings, which is legion. After this I want glass, glass, glass, for my honey-cases.

Coal Vale, Kas.

S. C. FREDERICK.

Now, friend F., let me make a suggestion. Get your price lists in winter, long before you need the goods. Study them very carefully, then go to your nearest store, and ask how they sell glass. Ask them, also, what they charge for the exact size you want. If the price named is more than the freight from the supply-dealer, then order of him; and I would suggest to supply-dealers that it may be well for them to take some lessons in packing glass. Glass can be packed so as to go safely across the United States, but it is not always done.—About the robbing rampage you had, friend F., next time you get into a scrape like that, if your windows can not be made tight otherwise, tack a sheet or table-cloth up over the window, and put strips of lath around the outside. Fix all other rooms in a similar way. Let the robbers out at night, just before dusk, and I guess it will be a pretty good idea to have each case of honey so secure that it is of itself bee-proof. Sometimes the bees have made pretty bad work on a case of honey during transportation.

HANDLING HONEY, AND PREPARING IT FOR MARKET.

SOME SENSIBLE SUGGESTIONS BY A GROCER'S CLERK.

MY "better half" is very much interested in reading GLEANINGS, for the many appropriate suggestions it contains in regard to the handling and care of bees. It is certainly of great importance, if one designs to make bee keeping a permanent business, to thoroughly understand all the little details that go to make the venture a paying one; and the season being a favorable one, and an abundant honey crop being secured, comes the last but not least item, how can the product be successfully marketed to the best advantage to both seller and buyer?

I have recently been employed in a store where a large amount of butter, honey, eggs, and various other country produce was brought in for sale by the farming community, and I know that the readiest sales were always effected by those who took extra pains to bring their packages in a neat and tasty condition. A poor quality of butter, if brought in a clean tin pail, nicely stamped and covered with a clean white cloth or napkin, would command a readier sale than a much better quality brought in a rusty pail, eight or ten pounds in a roll, jammed into a pail any way, instead of being laid in with care, not stamped, except by fingerprints, a liberal allowance of hair and straws, the whole surmounted by a brown dish-rag for a covering, or something similar. You may think this a strong assertion, but it is *solid fact*.

Our grocery department was located in the rear part of the store, and what honey we took in was there stored on shelves, mostly in two-pound sections. Of course, it dripped; and every little while a wash-basin of water and cloth were called into requisition; the shelves were a bait for the flies, and

every article brought into contact was sure to get "stuck up." Of course, the sales were slow, and oft-times required considerable argument to effect one.

I expect to have a considerable quantity of honey to market this coming season, and have made up my mind that, to create a demand for the product, it must be placed on sale in a *presentable* condition, to say the least. I purpose to make a glass showcase, of a sufficient height to hold an ample number of one and two pound sections, tiered to show off the contents to the best possible advantage. The top of the case can be used for storing up a quantity of extracted honey, either in glass jars or tin pails, the whole in summer season to be covered with mosquito-bar, to protect the labels from flies; and being placed in a convenient position for securing notice, it seems to me that such a method will command ready sales, and that honey will not go a begging.

L. S. WALKER.

Vernon Center, N. Y.

GROWLERY.

SOMEHOW this department of late has been rather laid on the shelf; and, in fact, I had almost forgotten the years in which I used to get unkind letters through the press and otherwise. The writer of the following has, at different times, attacked me publicly, and called me hypocrite, etc. As nearly as I can remember, his complaint is, that I refused to pay the return charges on a box of fdn. which I sent him, and which he wished to return, *long after the honey season was over*. I wrote him that if, on examination, we found the fdn. in our opinion not what it ought to be, we would return him the money, paying all charges both ways. If the fdn. was, in our opinion, faultless, *he* must pay the charges both ways. On receipt of it I carefully inspected it, and pronounced it fully up to the average we sent out, and therefore remitted him what he paid, less charges. May be our fdn. is not equal to some sent out by other manufacturers; and if this admission, or this letter which we give below, injures our trade in the commodity, let it be injured. Here is the letter, written to our postmaster:

Postmaster, Medina, Ohio:—

Dear Sir:—Will you please be so kind as to inform me of the whereabouts of one A. I. Root, late of your city? He owes me a little bill, and has failed to respond to my requests for a settlement. Perhaps he has left for other parts. Can you tell me where he may be addressed? I believe he has been a dealer in glucose, and advertised a 3-cent counter. Please answer on enclosed card, and oblige yours, etc.,

Feb. 9, 1885.

I am not aware that any letter received from the friend above has remained unanswered, and I can not see that it would be right for me to hand over the money in answer to any such demands. I have no ill will toward the writer, and I do not know what more I can do than to pray that God may take away his unkind, unreasonable, and bitter spirit. If I have not stated the above correctly, and he wishes to reply in a courteous manner, I am willing to give him as much space here as I have occupied.

SOME EXPERIMENTS.

MORE ABOUT PREVENTING THE CRYSTALLIZATION OF SUGAR SYRUP BY THE ADDITION OF HONEY.

ON page 13, friend Root says to J. D. Gehring, "Very good, friend G. But if honey effectually prevents crystallization, what is the use of going to the trouble of boiling it? Just pour boiling water on your sugar, put in the quantity of honey mentioned, stir it thoroughly, and there you have it, without taking it near the stove at all." But the trouble is, "there you *don't* have it," and that is often the trouble with us when we attempt to make theory take the place of practice, and scientific thought the place of fact.

When making my different experiments last fall, to see if I could not get a syrup for feeding purposes which would not crystallize, and thus bother the bees, I also tried another, which was, to see what quantity of sugar syrup must be added to honey to keep it from granulating, as I had a few people who desired honey fixed so it would remain a liquid for an indefinite time, while all know that nearly all of our honey will granulate in a few weeks after being liquefied by heat. As in these experiments the honey must still hold the same flavor afterward that it did before, of course I could not boil it, for by so doing the flavor is always changed. So I made a syrup of the consistency of honey, and let it cool until it was no warmer than that I could hold my hand on the outside of the vessel which contained it. I now took six glass dishes, and in the first I put all it would hold of the regular bee-feed, such as I told you of last fall. The second I filled with clear syrup as it came from the vessel spoken of above. For the third I took three parts of this syrup and one part of my best honey, which had not yet begun to granulate. This honey was first carefully mixed with the syrup, by putting both in a vessel together, and stirring until thoroughly incorporated, when it was poured where it was to stay. The fourth contained a mixture of one-half honey and one-half syrup, incorporated together as was the third. The fifth glass contained a mixture of three parts honey and one part syrup, while the sixth was filled with clear honey. All were now carefully secured from dust and moisture, and set away in a dark place in my shop, where they have been left unmolested for 3½ months. The mercury has been as low as 12° below zero in this shop during this time, and as high as 80° above.

To-day I got out these dishes, and this is how I find them: The first, or bee-syrup, remains exactly as it was when placed there, thus showing that I have a permanently good thing in the shape of 30 lbs. sugar, 15 lbs. of water, and 5 lbs. of honey; the water first being brought to a boil, then the sugar poured in and stirred half a minute or so, when this is allowed to boil. The honey is poured in, and the whole mixed as soon as the vessel containing the syrup is taken from the fire. I have given the process in short again, thinking you might have some new subscribers for 1885 who would not see my 1884 article.

The second, containing clear sugar syrup, has the dish one-half full of clear, transparent, and whitish crystals, while the liquid portion is nearly as thin as water.

The third (¾ honey, ¼ syrup) has a few crystals attached to the sides of the glass, while the bottom is quite thickly covered with crystals, the syrup being a little thinner than when first made.

In the fourth, which is ½ honey and ½ syrup, I find little change, except here and there a little speck of granulated honey the size of a pinhead and smaller. I can not detect a single crystal anywhere. Were it not that this takes ½ instead of 1-10 honey, it might be equally valuable as a bee-feed.

The fifth (¾ honey and ¼ syrup) is granulated into a soft pliable candy, which would do quite well for shipping queens with, if it will not soften so as to run in warm weather. It is very much whiter than the sixth (clear honey), which is granulated very hard and solid, except having a little moist look on top.

From the above it will be seen that it becomes almost a necessity to boil our bee-feed, no matter how much the "gude wife" may object, if we would have a first-class feed in every respect. Those of us who have steam-engines can boil it with steam, and by the barrel, to which the "gude wife" will not object; while those having an oil-stove will find a convenient place in almost any unoccupied room where they can prepare the feed.

G. M. DOOLITTLE.

Borodino, N. Y., Jan. 26, 1885.

Friend D., perhaps you did not mean to accuse me of attempting to make theory take the place of practice; but the close of your first paragraph looks a little that way. I think we have fed about as many tons of the sugar syrup as most of the brethren, and I believe our bees generally winter pretty well too, and we have done it without boiling the syrup either. Lately we have used a steam-pipe in a large tin can, because we can get the sugar boiling quicker that way than by pouring boiling water on it. If 30 lbs. of sugar, 15 lbs. of water, and 5 lbs. of honey behaves itself right along as it has with you, I do not see what more we desire, and we owe you a vote of thanks for the experiments you have made.

SEPARATORS FOR SECTIONS, AND HONEY-BOARDS.

ALSO SOMETHING ABOUT RECALLING THE DISCARDED HONEY-BOARD.

EDITOR GLEANINGS:—Many of us are surprised at the evidence presented before the N. W. Bee-keepers' Convention against their use. But for the first time it is admitted by Mr. Hutchinson that the whole case must be taken off at once, for to put in new ones beside those partly filled would surely cause bulging.

This was one of the points I made last summer in my letter. A remedy for that was suggested, it is true, by a number, that by crowding to one side unfinished sections, and facing new ones by those capped over—a vain remedy, for it only increases the evil when those are done. What bee-keeper would advise leaving snow-white capped sections in till new ones alongside are completed? Wouldn't they become soiled?

I know it is no light matter to question the evidence of such producers as Messrs. Heddon and Hutchinson; but repeated experiments in my racks, and in wide frames, to get honey I could crate has failed every time, even when using whole starters. I would, therefore, advise beginners to go slow.

When honey is booming, in tiering up and sometimes transposing sections, is the way to help the

bees; but using cases or racks spread over the whole of a ten-frame L. hive, we all have colonies which will do more and better work without tiering, if we can quickly take out sections as fast as they are filled, and put in others; and we are far less likely to be caught with a large number half filled at the end of the season.

By closely watching the seasons, and having a hive on scales, we can tell when to draw in and close up, and in time contract, by not replacing the sections drawn out, and using separators shoved up to one side, and covering the vacancy with a quilt.

Now as to honey-boards. Why were they discarded, and why now by many recommended? By their use were any such results ever obtained as have been since they were discarded? None reported have ever come under our notice.

To get the bees at work quickly, and to present the least impediment to their entrance to the surplus-chamber, is surely an object. The honey-board was cast aside as an impediment. There is hardly a doubt but that bridge-building and bracing combs, so annoying to the manipulator, can in a great measure be prevented by lessening the space between the sections. I have found it to greatly diminish the number of brace-combs, to bring the rack down so as to leave only $\frac{1}{4}$ inch space, above brood-combs. A friend tells me he succeeded well with strips of enameled cloth across and directly on the brood-frames. With my rack resting on a $\frac{1}{2}$ -inch strip across each end of it, I can, with a knife, loosen the rack without disturbing the brood-frames.

In manipulating we have frequent need to get into the brood chamber, and any honey-board is in the way. Did we not all think it a grand step forward when the flexible quilt was substituted for the cumbersome honey-board? J. W. PORTER, Charlottesville, Va.

MICHIGAN STATE CONVENTION.

What I Saw and Learned.—No. 4.

A BEE-CELLAR WITH A RUNNING SPRING IN IT.

J. H. ROBERTSON still succeeds nicely in wintering with his large cellar with a spring in it. He did not agree, that pollen was the cause of the dysentery among his bees. Prof. Cook suggested it was because of the stream of water that equalizes the temperature. Now, it occurs to me right here that possibly a stream of spring water running through the cellar may be as good, or better, than the sub-earth ventilator. The water would be constantly bringing heat from the body of the earth, and the stream might be spread out in its passage through, so as to yield up a great part of its heat before it goes off.

SAVING HONEY BY CELLAR WINTERING.

A number of testimonies seemed to indicate pretty decidedly that a saving of something like 10 lbs. of honey per colony was made by wintering in cellar, compared with outdoor wintering. I suggested that a good chaff hive should give almost as good results as a good cellar; but I was told by quite a number that I was mistaken. Now, I know there is a saving of honey by having bees in a good cellar; but in our State of

Ohio I can hardly think it amounts to as much as 5 lbs. per colony. This 5 lbs. of stores, at the present price of sugar, need not represent more than 25 cts.; and I do not believe we could put our colonies almost to the cellar, and take them out, including the preparation needed to make the cellar dark, well ventilated, etc., for much less than 25 cts. per colony. Besides, with the changeable weather we have here, sometimes almost a week when there is not a bit of frost right in the middle of January, most of our Ohio people are, I believe, decidedly in favor of outdoor wintering, especially late years.

I was not present at the afternoon session of the last day, and therefore I take the following from notes sent me:

Friend Hutchinson says he would prefer frames for queen-rearing not over 8 or 10 inches square. This revives the old question of a divided Langstroth frame, or a frame to hang crosswise in the Heddon Langstroth Hive.

HOW FAR APART MUST HIVES BE PLACED IN THE APIARY?

James Ure thought they should be placed about 9 feet; Dr. Mason thought 6 feet, and Dr. Whiting thought they might be as near as six inches. I think all of the gentlemen may be right; but if entrances are only 6 inches apart, there should be some strongly marked difference between the entrances. With our arrangement of the house-apiary there is no confusion, even though the entrances are but a few inches apart, because there are only three entrances on a side, while with lawn claff hives, made exactly alike in every respect, and facing the same way, there is often confusion when they are as much as 14 feet apart. Prof. Cook illustrated it in this way: His house and Prof. Carpenter's house are almost exactly alike in appearance and points of the compass. Now, although they are several rods apart, when honey was exposed on Prof. Cook's back porch, so that the bees got to robbing, they would swarm around the back porch of the other house, and I should be pretty sure they would, had he not said so. This is one considerable trouble in not making a lot of hives alike, even if they are several rods apart in a large apiary. I once before suggested that we might make use of this feature in making artificial swarms and nuclei. Nobody has worked it out yet, that I know of. A methodical bee-keeper likes to have his hives uniform; but if he does, he will be pretty sure to have bees getting into the wrong hives. Making them face to the same points of the compass helps the matter; but then we have bees wasting their time while heavily laden, trying to get in at the back side of some hive where there is not an entrance.

We copy the following paragraph from the *American Bee Journal*:

GETTING NICE HONEY.

Upon request, Miss Wilkins told how she and her sister managed to secure such nice honey. They used the Doolittle system and removed the honey as soon as sealed. They use the nicest white-poplar sections that they can procure, as they thought that this made a great difference in the appearance of the honey. The propolis is not only scraped from the sections as soon as they are taken from the

hive, but all stains caused by the propolis are carefully scraped away with glass. Another and important reason for their honey being so nice, is the source from which it is gathered; viz., the willow-herb.

From the above it would seem that the Wilkins sisters are troubled with propolis and stains from letting the bees have access to the sections, as well as we are. I tell you, friends, we don't want bees tramping over our nice white basswood sections.

VENTILATION.

Dr. Whiting recommended raising the hive from the bottom-board. This is equivalent to the plan of ventilating the Simplicity hive, and I do not believe any thing can be invented more simple than the entrance adjustment of the Simplicity hive, for accommodating the bees as they go out and in, and for giving all the ventilation that may be needed.

REPORTS ENCOURAGING.

MY REPORT FOR 1884.

I COMMENCED the spring of 1884 with 21 colonies, all blacks; increased to 57; obtained 247 lbs. comb honey from top story, about 800 lbs. in section boxes; the rest in brood-frames; ten colonies made no surplus; average weight of hives, put in cellar Nov. 23, 55 lbs. From all reports I read, I think my yield fully up to the average; but the slow sale or no sale at paying prices makes me wish I had never engaged in the business.

A WORD IN FAVOR OF THE ZINC HONEY-BOARDS.

I used the zinc honey-board on nearly all of my hives; in only two did I find the queen in upper story; almost invariably I found brood in upper story when I used wooden honey-boards. This trouble cost me more than the zinc honey-board.

BOKHARA CLOVER.

I invested 50 cts. to test the merits of this clover for all purposes recommended by different writers. I now expect to expend \$50.00 in the next two years, trying to eradicate the noxious weed from my premises. I admit that bees work upon it, but my stock refuse to touch it, with the exception of one horse.

E. E. BABCOCK.

Elroy, Wis., Jan. 22, 1885.

Friend B. Bokhara clover is not intended to be used for stock, although if cut at the proper age, they will use it to some extent. All you have to do to eradicate it is to cut it off before it goes to seed. You can very quickly wind it up by this treatment. If you try to dig up the plants, no doubt you will find it a tough job.

A TRUE REPORT.

I started out last spring with 47 swarms, partly Italians, partly blacks, and partly hybrids. They increased to 103 swarms. I received 800 lbs. of comb and 400 lbs. of extracted honey. The latter was sold as fast as I could extract it, at 10 cents per lb. The comb honey I have still on hand, except about 300 lbs., which I sold at 15 cents per lb. This makes my income for the season \$85.00. My expenses for the running year were, for hives, sections, comb foundation, extractor, shipping-cases, etc., \$274.98. My report is true. I sold all of my bees last fall, but 75 swarms, and I want to sell about 40 or 50 swarms

more. I will try it with the rest once more, and run for extracted honey only, as it sells the best here. If I do not make enough another season to cover my expenses and labor, I shall quit the business.

Dundas, Wis., Jan. 28, 1885. G. W. ALBRECHT.

FROM 21 TO 47, AND 123 LBS. OF HONEY.

Spring count, 21 colonies; increased by natural and artificial swarming to 47 strong colonies. I got 1500 lbs. of extracted and 223 lbs. of comb honey. I sold all of my honey at 10 and 15 cts., right at home. I think I could have sold 2000 lbs. more, if I had had it, up to date. I got 4 colonies from a farmer near by, who was going to brimstone them, but I went to him and turned them out, and took them home, and gave each colony 30 lbs. of good sealed basswood and clover honey, and I have 43 combs of good sealed honey left for spring feeding. I have 8 colonies on their summer stands, 24 in bee-house, 19 in clamp.

WILLIAM SEITZ.

Hustisford, Wis., Dec. 22, 1884.

FROM A BEGINNER WHO STARTED LAST SPRING.

I bought one box hive at \$7.00; and a Jones hive with bees at \$7.00; got no honey from box hive, but I got 3 swarms put in the Jones hives. Sold 3 swarms for \$6.75; got one swarm from the colony in Jones hive, and made one in Sept., just for practice, and it did well. I fed it right along, and the queen laid up to October 12th, and went into winter strong, packed all in one big box filled with chaff. They are all in good shape up to date. I extracted 375 lbs. of honey—good honey at that. I got about 10 lbs. of wax; paid \$7.00 for extractor, \$1.00 for smoker, and 30 cts. for veil. I made my own capping-knife, as I am a blacksmith. I sold my honey at 15 cts. per lb. The most money made by any colony for one week was 45 lbs. I had a big time getting my experience with them, as they treated me very indifferently at times; but as I got to understand the nature of them I got along better, and by studying GLEANINGS it brought me out all right. I have a good situation, right in a valley, where basswood is plentiful. Now, is this a fair average for a beginner? The bees I now have are worth \$50.00.

DUNCAN PEER.

Zimmerman, Can., Jan. 22, 1885.

FROM 12 COLONIES TO 24, AND \$30 LBS. OF HONEY.

I have seen no report from this vicinity (friend Pond is the nearest), so I will send in a short one. I started last spring with 12 colonies, most of them not very strong. Our best honey season is usually during fruit-bloom, and the trouble is to get colonies strong enough to take advantage of it. Last year my bees gathered but just about enough to pay expenses and winter themselves, and this year, up to Sept. 1, I thought this season was to be a repetition of last, as I had taken only 150 lbs., and hardly any honey in the hives. But as friend Pond says, I never saw brood-rearing kept up to such an extent, and my 12 colonies more than doubled, without much effort on my part.

The first 10 or 12 days of Sept. were the hottest of the season, with warm nights, and every thing seemed to be favorable for the secretion of honey. Goldenrod and asters were in their prime, and in about ten days over 600 lbs. of honey flowed through my hives, and by way of the extractor into my honey-room, making quite a different report from what I expected. I got 20 cts. per single lb., 16½ cts. per lb. in 6-lb. lots or more; I sell none for less than

that. I get granulated sugar for wintering, at 6½ cts. per lb. I have taken in all 830 lbs. honey, nearly all extracted (I feed sugar entirely for wintering). Reckoning the honey at 16½c., and six colonies increase, which are not sold, at \$30.00 (I sold 8 colonies during the summer and fall), I have cleared just about \$200, after paying all expenses, and feeding for winter. I think this is doing pretty well for this section, where we have no clover or basswood. I work in a store, and have been out but very little, and did nearly all the work myself; but you may believe I have not had much spare time for any thing else.

R. J. FOX.

Natick, Mass., Oct. 20, 1884.

25 LBS. PER COLONY, FROM 39 COLONIES.

Honey crop poor; about 25 lbs. per colony; 39 colonies, spring count; had to drop 4 colonies on account of being cramped. S. D. RUTHERFORD.

Kearneysville, W. Va., Dec. 16, 1884.

FROM 15 TO 42, AND 11 BBS. OF HONEY.

I started last season with 15 swarms and ran them up to 42, and 10 swarms came out and left without settling. I got 11 bbs. of honey last season. I borrowed an extractor.

R. S. NELSON.

New Smyrna, Fla., Dec. 4, 1884.

FROM 15 TO 17, AND 700 LBS. OF HONEY.

I had 15 colonies this spring; got 700 lbs. of comb honey, and two swarms; they are all on their summer stands this winter. They are all living yet. I love to read GLEANINGS.

L. J. HARTONG.

Inland, Ohio, Dec. 26, 1884.

BEES AND STRAWBERRIES.

I have four hives of bees on their summer stands; they had a fly the other day; they seemed all right. I have out about 2000 strawberry plants. I set them out the 3d day of last July. They looked finely when I covered them up in the fall.

Anderson, Ind., Jan. 6, 1885.

G. W. BROWN.

We clip the following from the *Watchman*, published at Union, Monroe Co., W. Va.:

LARGE YIELD.—Mr. A. Y. Leach, of Wolf-Creek District, is skilled in the management of bees. During the past season, from thirteen hives of Italian bees he extracted *twelve hundred and twenty lbs.* of honey. He uses the "Simplicity" hive, some 1½, some 2, and some 3 stories in size. The 3-story hives yielded 230 lbs., equivalent to twenty gallons. Who can beat this yield?

FROM 125 TO 400, AND 785 GALLONS OF EXTRACTED AND 1500 LBS. OF COMB HONEY.

I commenced in spring with 125 colonies of bees, mostly Italians and Cyprians, and two hives of Holy-Lands; got fifteen 52-gallon barrels of honey, and increased to 400 hives, all in good condition for winter; also got 1500 lbs. of comb honey in one-pound sections.

E. STAHL, JR.

Kenner, La., Dec., 5, 1884.

500 LBS. OF HONEY FROM A SINGLE COLONY IN A SINGLE SEASON.

Bees boomed in one hive in July and August. In July one colony gave 500 lbs. of honey. How is this for a poor season?

R. JOHNSON.

Plaquemine, La.

Friend J., we are very glad indeed to get such a report from Louisiana; but your statement is so brief it hardly satisfies us. Can't you give us a little more of the particulars—what the honey came from, etc.? Was it one colony and increase, or did you so manage there was no increase?

FROM 54 TO 69, AND 4000 LBS. OF HONEY.

I commenced the season of 1884 with 54 colonies, and increased to 69, and have taken 4000 lbs. of comb honey. It wasn't a very good season here.

Bravo, Mich., Jan. 20, 1885.

D. B. LINDSEY.

FROM 6 TO 20, AND 300 LBS. OF HONEY.

Our bees have done well here in the Sioux Valley. We have increased from 6 to 20, and stored nearly 300 lbs. of honey, which we sold for 20 cts. per lb., and they went into winter quarters with about 50 lbs. of honey each.

G. L. HUBBARD.

Fairview, Dak.

2800 LBS. OF COMB HONEY FROM 30 COLONIES, AND NO INCREASE.

I keep 30 stocks of bees; and by keeping the wings of queens clipped, and running the swarms back into the old hive, or into a weaker colony, I have managed to keep to that number. I took 2800 lbs. comb honey the past year, and got \$12.00 per hive, after paying expenses.

S. R. NEAVE.

Hughesville, Md., Jan. 16, 1885.

FROM 15 TO 27, AND 1650 LBS. OF HONEY.

I am highly pleased with one year's experience in bee-keeping here, and intend to read up and carry on the trade with more system hereafter. Bees are actually getting some honey now. I have none of the winter troubles you have north. One year's harvest from 15 stands is 1650 lbs. honey, and 27 new stands.

FRANCIS TRUEBLOOD.

Archer, Florida, Jan. 16, 1885.

FROM 2 TO 10, AND 150 LBS. OF HONEY.

Well, I started with *two* colonies in the spring, weak at that, but I fed some sugar, and increased to ten by natural and artificial swarming. And I got 150 lbs. of comb honey; being a green hand at the business I could not have done so well had it not been for your A B C and GLEANINGS. If this does not go to the waste-basket, you may hear from me again.

P. L. ANDERSON.

Greenfield, Iowa.

A GOOD REPORT FROM AN OLD FRIEND.

As reports are in order, and as I have not sent you one in a good many years (and, if I remember correctly, that was a very poor one, one that would have made good material for *Blasted Hopes*); but, however, I lived through it all, and since then have been having better luck. This report is intended to cover the four past seasons. The spring of 1881 (after one of the hardest winters on bees I ever knew) found me in possession of two rather poor swarms of bees. To say that I felt blue does not express it; but I went to work with a will, and at the close of the season I had 10 good swarms and 500 lbs. of extracted honey; wintered them all successfully, and in the spring bought two more swarms, so I began the season of 1882 with 12 swarms; increased them to 31, and got 1500 lbs. of comb honey; lost five during the next winter, so I began the season of 1883 with 26 swarms; increased them to 54 swarms, and got 2200 lbs. of comb honey; lost four the next winter, so I began the season of 1884 with 50 swarms; increased them to 94 swarms, and got 4800 lbs. comb honey. You will see, by taking the spring count for the four seasons, the average per swarm is just 100 lbs., and during this time I never have bought any thing to feed my bees, they having gathered their own living.

Eureka, Wis., Jan. 22, 1885.

W. H. TENANT.

FROM 80 TO 136, AND 400 LBS. OF HONEY.

I have had good luck with my bees this year. I wintered 80 stocks; put 137 into the cellar Nov. 15; sold about 4000 lbs. extracted honey for 10 cts. per lb. This has been a very good season with us in this county.

DR. GEORGE DUNCAN.

Embro, Canada, Dec. 18, 1884.

FROM 25 TO 30, AND 1540 LBS. OF HONEY.

My honey report for the season is as follows: 1540 lbs.; 700 extracted, the rest comb. I had a good fall yield; had 10 swarms in August; one on the 2d of September. I put them all back, as I do not wish for increase. I had 25 swarms, spring count; lost none in wintering; gone into winter quarters with 30 swarms, all in good condition. J. D. HUTCHINSON.

Windsor, N. J., Dec. 19, 1884.

FROM 17 TO 35, AND 700 LBS. OF HONEY.

Two years ago last spring (April) I took four colonies. That year I had an increase of five; wintered well. The season following, my colonies numbered 22, of which I sold five, wintered 17. Now I have 35 colonies—perfect success. Notwithstanding the frost on the 31st of May, and the blight of flowers, I drew over 700 lbs. of pure honey. I have not learned to feed as yet. How many colonies must one need, to afford a foundation machine?

Killbuck, N. Y., Jan. 23, 1885.

M. E. FOLTS.

Friend F., your last question would depend somewhat on the price of wax in your vicinity, and whether you work for extracted or comb honey. At a rough guess, I should say it would pay a man to have a fdm. mill when he reaches as many as 50 colonies, providing, of course, that he has leisure time in the winter, or during stormy days, to work up his wax.

FROM 20 TO 60, AND 200 LBS. OF HONEY.

I began with 20 stands, spring count, and but 6 strong ones. My bees died off in the spring with the "dwindles." I increased to 60 good full colonies in July. I tried my new Novice extractor, and found it to be very satisfactory. I got about 200 lbs. of honey, dark, but well tasted; did not get any section honey, hence my bees are in debt to me by \$156.00. The flow of honey was limited all the season. I sold several queens, and some of them could not be bought for \$5.00 now. My bees are all on summer stands on wide L. frames, and plenty of good goldenrod honey to eat.

REVIVING FROZEN BEES.

They had a nice fly yesterday, and the snow was all over the ground, and several bees perished in the snow. Last evening I picked up about 30, which were frozen stiff, and they nearly all revived. I have them in a cage. I went out early this morning, and with my penknife cut several bees out of the ice, and brought them in, and five out of twenty revived and are in the cage doing well, after having been frozen in the ice for 14 hours or longer.

My extractor has never thrown any honey out over the top yet.

I expect to run for queens this season, as I have several orders for queens and nuclei hives, to be filled the first of March.

H. J. HANCOCK.

Siloam Springs, Ark., Jan. 28, 1885.

Friend H., the bees that fall on the ice will come to life if they are warmed up before they have been there more than from 24 to 48 hours; but after that length of time I think you will find they can not be revived,

nor can they be revived after being thus exposed to a temperature of more than somewhere about 10 degrees below zero. Perhaps I have not got the number of hours and the number of degrees exactly right, but it is something near it. Perhaps somebody else can put the figures a little more definitely.

REPORTS DISCOURAGING.

FROM 3 TO 8, NO HONEY, LOST 4 BY MOTH, AND 2 BY MICE.

YOU say that all interested in bees should send in a report, good or bad. My report is as follows: Started in spring, 1884, with 3 colonies; increased to 8, with no honey, scarcely, and plenty of moth to fight; and with all the care I could give I lost 4 by the moth, as I think, 2 by mice, and 2 I don't know how. Right here I should be glad to have some light, for last season was a peculiar one among bees here. One friend lost 19 out of 23; one lost 15 out of 16, and so on all through this section. I am under the impression that the queens got destroyed in some way or other. In all of mine I don't think there was as much "bee-bread," as it is generally called, as would fill one side of a frame full of comb. If nothing happens, I will start with Italians in the spring. You can put me in Blasted Hopes for the present; have never had occasion to use my extractor that I got of you early last season.

JAS. A. STAFF.

Moscow Mills, Mo., Jan., 1885.

Friend S., Italians would have been a great deal better to battle with the moth; but I think had you given them proper care, even the common bees would have held their own. The entrances to your hives should be so small that mice can not get in. I think a little more experience will enable you to come out all right, and I hardly think the scarcity of pollen had any thing to do with it. Queens often disappear during a severe dearth of honey. The remedy here would be to feed, and I am inclined to think proper feeding would have saved your whole eight colonies in your warm climate.

THE SIMPLICITY HIVE,

AND THE DESTROYABLENESS OF AN E-FRAME SIMPLICITY HIVE, ETC.

I HAVE used the Simplicity hive for the last five years. Before that I had used two kinds of patented frame hives, K. P. Kidder's and W. H. Lee's. I had also used three kinds of unpatented hives, the straw, the box, and the tub, the latter being made by sawing a hollow basswood log into convenient lengths, and nailing a piece of board over one of the ends of each.

The Simplicity is the best hive that I have any knowledge of, and may be the best in the world; but I do not consider it perfect. I think it would be better if it were smaller. Its length or depth could not be changed without changing the size of the frame, but it could be made narrower, and would then be large enough for any common swarm. An uncommon swarm could be given an extra top story. The advantages that would be gained would be reduced cost, increased warmth, and more surplus in upper stories. The only objection that I

can see is the fact that there are several hundred thousand of the ten-frame hives now in use, and more being made every day, and these are too valuable to be discarded. I am sure that I don't want to make kindling-wood of mine, or cut them down to a smaller size, and I will not advise others to do what I would not do myself. J. W. HARKNESS.

Keeseeville, N. Y., Jan. 24, 1885.

Friend H., this matter of an 8-frame hive has been discussed and dropped a great many times in years past. While we use 8 Simplicity sections in a wide frame, it is quite desirable to have the hive large enough to get a frame of sections outside of the brood-nest on each side of the hive. If we are going to get all of our honey built in crates, however, and not make use of side storing at all, an 8-frame hive might do very well. As wide boards for covers are quite expensive, there is quite a saving in having a narrow hive, because we can then get boards for covers without much trouble, and with not nearly as much danger of checking through the middle. An 8-frame hive is also easier to handle, and, of course, better for shipment; and where you are selling bees at so much per colony, of course it is an advantage to the producer to have a narrow hive, like small barrels for apples, and hens that lay small eggs. If the purchaser is satisfied with a colony that covers only eight combs, why, of course it is all right, and eight combs make a very fair colony. We have got to face the difficulty you mention, however—8-frame hives can not be used interchangeably with 10-frame hives. Adam Grimm has always used an 8-frame hive, and friend Heddon, as you will see by another column, has also followed friend Grimm.

WOMEN FOR PRESIDENTS OF BEE-KEEPERS' CONVENTIONS.

SOMETHING IN REGARD TO THE INDIANA STATE BEE-KEEPERS' SOCIETY.

MRS. C. Robbins, the late president of the Indiana State Bee-keepers' Society, was aware that, if the same persons attended yearly, and related their *modus operandi* of running an apiary, it would grow monotonous after awhile, and all interest would be lost, and eventually the society would become extinct. Local societies should take the hint, and every year introduce some new feature, or persons, to their reunions. The weather was very inclement, being 20 degrees below zero on the morning of the first session, yet there was a goodly number present.

It would be well if other States would imitate Indiana, and have a bee-keepers' meeting in rotation with other State societies, the bee-keepers' following the cane-growers', to be held at the capitol of the State. Scientists are attracted hither by more meetings than one, and many can have the benefit of their researches. In this way the Indiana society had the benefit of a learned essay from Prof. Wiley, of Washington, D. C., on the "Chemistry of Honey," and the result of ten analyses of honey purchased in the open market. Mrs. Robbins invited a professor from Purdue University to be present; as he could not comply, he sent a student who gave an interesting talk, with fine illustrations of the sting of bees. He also brought a powerful microscope,

with specimens of stings, from worker and queen-bees, which all so disposed could examine, which was a rare treat, as few bee-keepers ever have such a privilege.

Mrs. Robbins was the first president of a bee-convention, or of any other society where the other sex are in the majority. She was diffident as a presiding officer, but made an excellent address, and worked diligently during the year, to make the bee-keepers' reunion a success. Her hospitality will long be remembered by those who gathered in her sunny parlors and sat around her table, and her liberality whenever their eye rests upon the beautiful badges, which are unprecedented in color and finish.

MRS. L. HARRISON.

Peoria, Ill.

MAKING A PEPPER-BOX FEEDER INTO AN ENTRANCE-FEEDER.

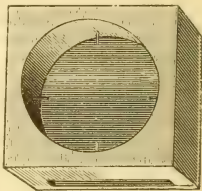
FRIEND NELSON'S WAY OF DOING IT.

I SEND you by this mail one of my feeders. I call it the "Pepper-box entrance-feeder." I make them in two forms, square and oblong, the oblong to cover as much or as little of the entrance as you think best. The nails are for a horseradish-bottle to rest on if you want to feed more than a pepper-box will hold. I got the pepper-box feeder from A B C, and used it resting on a lath at the entrance. If from some cause the bees did not take all the feed it would start robbing in the morning, so I hit upon this device. It is very easily made, and very handy. If you object to the nails, you might run two pieces of wire through; and if it will be of any use to you, you are welcome to it. It can be used inside of the hive, as some prefer that way of feeding. WALTER H. NELSON.

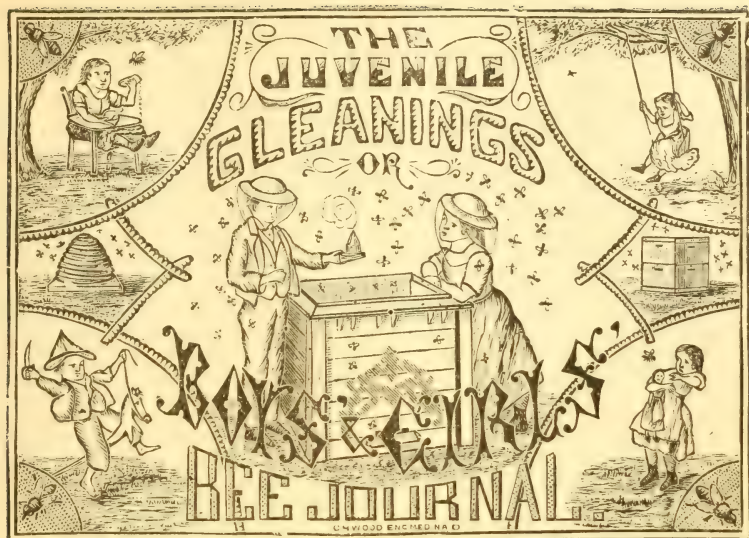
New Bedford, Mass., Jan. 8, 1885.

The adjoining cut shows of itself the way in which an entrance-feeder can be made of a fruit-jar, pepper-box, or even a horseradish-bottle, as friend N. puts it. For a horseradish-bottle, you cut a piece of wood about 2½ in. square. Bore a hole in it 1½ inches in diameter, and on one side split out the wood 1½ inches.

To keep the bottle from slipping clear down in the cut. Place the open space facing the entrance of your hive, and close up against it. If the colony is weak, the entrance of the hive should be contracted pretty well, then no outside bees can push in and get around inside the feeder. You can tie a piece of coarse cloth over the mouth of the bottle, or you can have a tin cap to slip over, if you choose. The pepper-boxes that we buy at the stores, full of pepper, have many of them a perforated cover. Just set this cover so the perforations will come all into the hole, and it is all right. If you want to use a fruit-jar, of course you will have to have a larger block. Friend J. W. Utter, of Amity, N. Y., sent us a block almost exactly like the above, some time ago.



BLOCK TO HOLD THE PEPPER-BOX FEEDER, BEFORE THE ENTRANCE OF A HIVE.



He that is faithful in that which is least, is faithful also in much.—LUKE 16: 10.

MYSELF AND MY NEIGHBORS.

The tares are the children of the wicked one; the enemy that sowed them is the devil. MATT. 13: 38, 39.

I WONDER how many of the little friends know any thing about foul brood. A good many people say it can not be cured—that the only way to get rid of it is to burn up the bees, hives, honey, and every thing. That is an awful severe way to cure disease, is it not, little friends? Well, our friends D. A. Jones, and Mr. Muth, of Cincinnati, both say it can be cured; and a Mr. Cheshire, across the ocean, thinks he has a remedy for curing the bees by just feeding some of it in honey. They call it phenol. It will be tested thoroughly this season. Do some of you ask where foul brood comes from? Well, I think it comes about the way Topsy, in Uncle Tom's Cabin, thought about herself. She said she "spected that she growed;" and I guess that foul brood just grows. Now, then, does it grow out of "nothing," as some folks put it? If I am correctly informed, there is not any thing that grows out of nothing. There are always seeds hidden away somewhere. Seeds have a trick of lying dormant a long while; and then when every thing is just right, they up and grow, as if they had only just thought of it, or took a notion to grow. Alsike clover sometimes lies in the soil several years. A good many of the friends have sown figwort and spider-plant seed, and they said not a seed came up. The following spring, however, or may be longer afterward, the plants came up thickly. If you ask any old farmer if corn ever comes up

where none is planted, he will laugh at you, and say, "Why, to be sure, not, sonny. There was never a stalk of corn grew since the world was made, unless a grain of corn got planted there some way." Perhaps this same old farmer will gravely inform you that weeds grow without seeds. He may tell you that fireweeds, the kind that bear honey, start up where brush-heaps and log-heaps have been burned, and where there could not have been any seed; for if there was any seed in the ground, the hot fire would surely have killed it all. Well, now, with all due deference to old farmers, and I know they are wise and sharp in their own line of business, I think it is pretty well settled that they are mistaken. No weed ever grows without a seed, but the seed may be a thousand years old.

How many of you little friends, and I guess I will say old ones too, have not, some time or other, thought to yourself, "What makes me feel so ugly this morning?" or, "What does possess me, that such wicked and bad thoughts should come into my head, as if some imp of Satan had whispered them in my ear?" I once heard a good woman say, who was a church-member, that sometimes awful blasphemous words would come into her mind, as if somebody had whispered them. Where do they come from? In the Pilgrim's Progress, which many of our little folks have read, Christian, as he walked along one day, was startled by awful foul, wicked words that came into his mind so vividly that it seemed as though he spoke with himself; and this was just after he left the palace Beautiful. He was after-

ward told that an evil spirit whispered these words in his ear. Well, now, dear friends, although it is an evil spirit that whispers these things in your ears and mind, it is, in another sense, simply a growth of bad seeds that have been planted. They may have been planted years before, in childhood, but they were planted at some time or other, or no such crop of foul, loathsome, and disgusting weeds would ever have intruded themselves where they were not wanted. This woman I spoke of had, at some time or other, heard wicked men or boys swear, or she would not have known what blasphemous words are. Now, if you allow yourself to stay around, or to work where swearing and obscenity go on, you will find, sooner or later, that bad seeds have been planted, and they will spring up when you least expect it. Bad examples of every kind are bad seeds; and whenever we discover that bad seeds are being sown in our minds, or in the minds of our children, we should stop it at once. If Canada thistles were commencing to go to seed across the road from your corn-field, you would, if wise, pitch right into them, cut them down, and burn them up before the mischief went further.

On another page I have told you how Huber's little mind caught up and saved impressions. These impressions are seeds; and if we want our children to grow up pure minded, we want to keep them away from bad talk, bad examples, and every thing that will sow foul seeds to torment and make them unhappy in after life. Peter Henderson, the great market gardener, says the way to fight against weeds is to begin when they are so little that a light, fine-toothed rake will tear them all to bits. A man with such a rake, starting out when the weeds are very small, will accomplish more than ten men with great stout hoes could do when the weeds get to be knee high; and so it is in this work of reclaiming our nation from crime and vice. Stop the sowing of bad seed in the minds of our little ones while they are yet small, and great crops of crime will be stopped. In the same way we should work in our own hearts when spiteful feelings come up. When a disposition to dwell on the faults of our neighbors first begins to manifest itself, with the fine-toothed rake of love and charity, stop the conversation in the outset; break up all these subtle weeds that are getting a start, and let healthy plants, in the shape of good words and encouraging talk, take their place. Do not talk about people in any way that would foster or encourage this terrible evil of unkind criticism and fault-finding. Stop sowing bad seeds, and put good seeds in their place. An hour's work now may save from the penitentiary, prison, and poor-house, a dozen lives fifty years hence. Somebody once asked how early a child's education should commence, and the reply was, "Fifty years before he is born." There is a great truth here, even though the remark may provoke a smile at first thought. You can commence now sowing good seeds, and preparing the soil, or the world, as it were, for the children that shall be born in 1935; and if you do not do it now, who will

do it? The prayer our Savior gave us included this sentence: "Thy kingdom come; thy will be done on earth as it is in heaven," and every earnest, honest Christian, should bear in mind that a part of this work and this promise is to be fulfilled by our united efforts. Shall we labor for it?

Do you want to know what all this has to do with myself and my neighbors? Well, these wrong thoughts and feelings I have been speaking of are, I am sad to say, sometimes neighbors of mine. They do not live across the way, nor up stairs nor down. They are right in my own heart. I was talking with my wife about it a few days ago, and she said she guessed I was right about it; they were the result of bad, impure seeds sown in my early life, during those years when I did not profess to be a Christian, and turned my back, as it were, on Jesus the Savior. They will probably continue to sprout and start to grow in my heart as long as life shall last; but I am determined they shall be raked to pieces and destroyed, just as soon as they show their ugly heads. Those who know do say, that by years of toil you can kill pretty much all weed-seeds in your garden; and by God's help I mean to see if I can not kill, to a great degree, every seed that I allowed the enemy to sow in those early years of my life.

THE OLD MAN'S BEE-STORY.

Good Cinthy was tending the cradle,
And I in the field with my boys;
We suddenly heard the horn blowing,
And strange unaccountable noise.

I hastily turned my steps homeward,
And saw, with my wondering eyes,
Black clouds in the wildest commotion
All around our dwelling arise.

I found that my bee-bench had tumbled,
The bees were intensely enraged,
And singing and darting and stinging,
In general warfare engaged.

The pigs all around me were squealing,
And switching and running apace;
The puppies were bitterly howling,
Calves bellowing over the place.

All over my head the bees 'lighted,
And made my condition most dire;
And clawing I called out, "O Cinthy!
Please bring me some rags and some fire."

The windows were fastened securely,
My baby was screaming for ease,
"Don't open the door!" shouted Cinthy,
"The babe will be killed by the bees."

I seized an old pan, and got fire;
The ranks of the warriors I broke,
And settled the horrible conflict
By raising a volume of smoke.

My poor bees by hundreds were missing;
But when all my hiving was done,
And platform made steady, my number
Of hives was the same—lacking one.

I got all my tubs and my buckets,
And filled them with honey and comb,
And now what good lesson, dear children,
Can we from this story take home?

Whenever you contemplate building,
What'er it may be, do it well;
Be sure to have solid foundation,
Not like my poor fabric that fell.

Dear children, you're building and building—
Oh build up a character grand!
And let not your hopes for the future
Be like the house built on the sand.

Columbus, Miss.

MRS. M. A. TAPLEY.

HOW TO MANAGE

So as to Have the Hives Full of Bees When
Fruit-blossoms Come.

CONTRIBUTED BY A LITTLE BOY 9 YEARS OLD.

My brother and myself have three colonies of bees. I will tell you how we manage ours to have them full of bees when the blossoms and flowers are all ready for them to gather honey from. We take tin pans, such as mother has to bake pies in, and put some rye flour and oatmeal in them, and then put them in front of the hive, and string a little honey or sugar syrup from the entrance to the pan, and put a small spoonful of honey or syrup in front of each hive, and when they get eight or ten bees on the flour we carry them away and put them on a post or any place we can find. Then we take some sugar syrup and put it in a tumbler, place two thicknesses of thin muslin over the top of them, and turn them upside down on the frames. This we commence to do now, or as soon as the bees begin to fly, and keep it up until they can get natural flowers to work on. If this is worth a book, send me Giant-killer.

GEORGE KINGSBURY, age 9.

Mt. Vernon, Ohio, Jan. 28, 1885.

Well, now, I tell you, George, that is pretty well told. Many of the veterans may profit by the instruction you give: and there are few of us who could tell just how to do it, better than you have done. By the way, I do not know of any prettier sight for young and old than bees working on rye meal, or bits of finely ground oatmeal, in the spring. There is not a bit of difficulty in getting them at it whenever the weather is warm enough for them to fly. Feeding should be done out of the wind as much as possible; and, by the way, the bees ought to be out of the wind themselves. I have just been thinking of making a sort of cave in a side-hill, with glass sash in front, but arranged so the bees can go out if they want to, and then every sunshiny day we will have them work on meal placed not very far from their hives, in the sun but out of the wind, and out of all danger of wind and snow. With the present low prices of sugar, it is my opinion that by such an arrangement we can raise bees a great deal cheaper than to buy them when we want an increase of stock. Plenty of sugar syrup, and rye and oat meal, will set brood booming. This cave in the south side of a hill or bank, it seems to me, could be easily arranged so that the hive might stand where it won't freeze after March 1st, say. Down by the carp-pond we have quite a steep bank fronting the south, and it is quite a warm place there for the children to play, when it is windy and cold almost everywhere else. The place is a kind of hollow between two banks, so that it gets all the sunshine, and but little or none of the wind; and a roof over it, so arranged as to let in all the sun, would keep off all the rain and most of the snow, and still allow the bees to fly as far as they want to go. May be it will be a nice place for chickens as well as bees—who knows? and if the bees and chickens enjoy it, I guess likely Huber and Caddie and Constance will find it a pleasant place. Of course, we want to keep the chickens by

themselves, so that our plans do not conflict with each other.

You see, George, your little letter has just woke me up to the importance of getting our bees at work early; and why can't we set the bees at work early, as well as chickens and garden stuff? Some writer has said that he would not wonder if as much honey were yielded by fruit-blossoms as by basswood, if colonies were as strong and as full of young bees as they are in basswood time. In the years that GLEANINGS has been going, we have had several reports of protected places for bees under a side-hill. Now, then, who will work it out first? With the skill and knowledge we have acquired by this time, I do not think there need be much danger of spring dwindling. Of course, we will try a few colonies to commence with, until we are sure it is working nicely. We send you a book, George, and place half a dollar to your credit, which you can have in money, or trade out, as you desire.

GUNS.

MRS. CHADDOCK'S EXPERIENCE WITH FIREARMS.

I USED to think that if any thing would make me religious it would be to have a boy around with a gun; but I ran a gun brigade for ten years, and am still alive, and I don't feel so timid of them now. Mr. Chaddock's three brothers used to be here, and they all had guns, and were always shooting them off "promiscuous" like.

One day one of the boys sat on the porch and cleaned his gun till it went off, and the whole load of buckshot came in through an open door and passed over the dinner-table—where we had been washing dishes not five minutes before—and went clear through the outside door. Then one of them fired the gun off in the bedroom downstairs, and the marks are there yet; another of them let his gun go off in the sitting-room, and the floor carries its mark. I do declare, when I would think of it it seemed like living in a fort, with the enemy bombarding me all the time. I never felt safe. Then they all began to marry off, and go to Kansas, and they bought a revolver apiece, and they sat around the fire and loaded and reloaded them; picked them to pieces, and wiped them out, and every now and then they let one go off accidentally; and the one that went off was always the one that was *not* loaded. Then they shot at marks, to get their hands in. They fully expected to be robbed when they got to Kansas, and they wanted to be able to shoot the robber. They had pieces of paper stuck on the woodhouse, the ash-hopper, and the big elm-tree; they had them on all the fences and the garden paling, and they would shoot awhile at one mark, then change to another, and I never knew exactly where they would be shooting next, and I hardly dared go to the well for water, or to the woodhouse for wood, and it seemed more than ever like living in a fort.

But, the darkest hour is just before the dawning; they soon went west, and for six years I have breathed freely—never having to dodge a shot nor tremble at the sound of a gun. But now, alas! can Providence have the same trials in store for me? am I to go out of quiet, peaceful life, into another fort? Am I to be shot at, shot over, and shot un-

der? Am I to rise up in the morning and lie down at night to the music of the shot gun? Will the boards with bits of white paper tacked on them spring up all over our dooryard, and be leaning up against trees and fences? Shall I be called upon to act as hospital surgeon every time the gun kicks? and shall I, oh! shall I be expected to be blind to every shot that misses, and to rejoice in all that hit? For now our boy is big, and he wants a gun; he doesn't want it as the girls want ribbons and rings, but he wants it as if his very life depended on it. When any one mentions a gun, he sighs; and if he hears a shot he turns pale to the lips; and when the wild geese and ducks fly over in the spring and fall, flying low down so that we can see the colors, and tell the drakes from the ducks, he goes off by himself so that we may not see him cry. He wants a gun just that bad, and now what am I to do? Tell me, all you that have boys.

Vermont, Ill., Jan., 1885.

MAHALA B. CHADDOCK.

THE TWO THINGS THAT JOHN HAS DONE DURING THE PAST YEAR.

THAT IS, WHAT HE HAS DONE IN THE BEE BUSINESS.

ALL I have done this year is two things; viz., I went to town one day and found a crowd collected around a small tree. I saw pretty soon that it was bees they were watching. They had already taken the most of the bees to the harness-maker's house, he being the first one to see them. There was about a halfpint left, and I said to the boy that was with me, "George, let's take the rest of these bees to Mr. Smith the harness-maker."

"All right," said he, and I held my hat under the limb, and he shook it, and the bees all fell in my hat.

We took the bees and put them in the hive and came on down town. About three weeks after that, one of the neighbors who has black bees came to borrow our smoker. Their bees are in the house, in a hive about 7 ft. long and 6 ft. high, with a door that you can walk in at.

When they came and asked for the smoker I concluded to go and rob their bees for them, therefore I got mamma's veil and a pair of gloves, and started. When I got there I lighted the smoker and walked in, and began to smoke them off the combs.

The bees began to sing, and made an uproar like an engine letting off steam. I got about six gallons for them, and got stung only once.

After I had taken out two or three gallons, I started in and knelt down. I had on linen pants, and I knelt down on a bee, and he made me know he was under my knee. One bee got inside the veil, but I had seen in GLEANINGS for that month that bees, when they got inside a veil, were always anxious to get out, and it did not scare me much.

These two things are all I have done this year working at bees. At the beginning of last spring, a year ago, mamma got a hive of bees of Mr. Theobald, of Centerville, a town about 6 miles from here. She made it a rule to open the hive once a day, and papa said that we had better leave the bees alone, as they did not do as well, he said, as when they were left alone. After awhile he took an interest in bees, and would open the hive once, and sometimes three and four times a day.

New Vienna, Ohio.

WM. M. NORDYKE.

THE WASTE-BASKET.

There's a specter tall and gloomy,
In the sanetum of the Ed,
Standing in a darksome corner,
With its ghastly mouth outspread.
'Tis more frightful, more forbidding,
Than a phantom of the dead;
It has caused more real terror,
Filled more hearts with quaking dread,
Than any fancied, fiery demon
Of a mind with reason fled,
Yet this horror of all writers
Is the best friend of the Ed.
Many hearts have quaked and quivered,
Many eyes have torrents shed,
When they found their fabled genius
Swallowed by this specter dread.
Oh could I tell each writer
Of our GLEANINGS here to-day,
That this greedy, cruel monster
Had departed, flown away,
Left the corner in the sanetum,
Never more with us to stay,
What a shout, what grand hosannas,
Would go up along the way!
But, then, may we speak the sentence?
Would it not cause more dismay,
Should this specter, at our bidding,
Close its mouth and soar away?
Could our Editor survive it?
Could he live one single day,
If his best friend were denied him,
His sole prop cast away?
Come to think, it would be better
To yield gracefully to fate;
So I'll send these verses forthwith,
Though they leave me desolate.
Never more I hope to see them,
In the mystic form called fame,
But to satiate this monster,
Go my verses and my name.

Selected and modified to suit GLEANINGS, by

W. W. ADDISON.

Friend A. and others. I have often thought what a nice thing it would be to publish every thing that might be sent in—good, bad, and indifferent, thus virtually annihilating the waste-basket, as you are pleased to term it. But, would our subscribers be satisfied? GLEANINGS would not only be so voluminous that very few could read it, but, worse still, I am afraid a still smaller few would be willing to pay the expense of putting every thing in print. I do not see but it is one of the laws of nature, that the fittest must survive and the others go to the wall. I will tell you how to get your communications into print, and at present I do not believe there will be much trouble in any case, if you go according to the following rules:

1. Do not write until you have something to tell; and when you tell it, tell it in the fewest words you can, keeping constantly in mind that many other brothers probably have something good to tell, and want a chance too.

2. Put a heading on every article, if you please, and then stick to your head; that is, do not mix up things; or if you must mix them up, make a little sub-head to the different subjects you touch on. Write plainly, and punctuate it as you want it.

3. Write for the good of your fellow-men, and for the glory of God, not to show how smart you are, nor with the view of getting money for what you write. The latter is all well in its place, but the first motive should be doing good to your fellow-men, and the money part will follow of itself.

4. Above all, be brief, especially if you are new at the business. When you are recognized as a regular paid contributor, then it is very well to write several pages, if you have enough worth telling to cover several pages.



Every boy or girl, under 15 years of age, who writes a letter for this department, CONTAINING SOME VALUABLE FACT, NOT GENERALLY KNOWN, ON BEES OR OTHER MATTERS, will receive one of David Cook's excellent five-cent Sunday school books. Many of these books contain the same matter that you find in Sunday-school books costing from \$1.00 to \$1.50. If you have had one or more books, give us the names that we may not send the same twice. We have now in stock six different books, as follows: viz.: *Sheep, O! The Giant-Killer*; *The Roby Family, Rescued from Egypt*; and *Ten Nights in a Bar-Room*. We have now in stock *Our Homes, Part I*, and *Our Homes, Part II*, which will be sent the same as the above. Besides the above books, you may have a photograph of our old house apia, taken a great many years ago. In it is a picture of myself, Blue Eyes, and Caddy, and a glimpse of Ernest. We have also some pretty little colored pictures of birds, fruits, flowers, etc., suitable for framing. You can have your choice of any of the above pictures for every letter that gives us some valuable piece of information.

"A chiel's amang ye takin' notes;
An' faith, he'll prent it."

But whoso shall offend one of these little ones which believe on me, it were better for him that a mill-stone were hanged about his neck, and that he were drowned in the depth of the sea. *MATT. 18: 6.*

HUBER is now getting to be large enough to talk, and ask questions; and, oh my! doesn't he just make use of his little tongue! One thing impresses me now, very strongly—how wonderfully like wax are these little minds, taking and storing impressions! and the solemn part of it is, that their little minds are just as ready to take in bad impressions as good. How very, very careful, then, ought we to be, how we act, and what we say and do before the little ones!

A few days ago, in trying to put on his mittens I spoke to him about his thumb. Then I asked him, "Where is thumb?" By way of reply he put his hand down and pointed to one of his fat toes. "No, no," said I, "that is *toe*. Where is *thumb*?" holding it up before him. Now, he did not know about thumbs and toes, but he had learned by sad experience where the kitchen *stove* was; so he replied, "*There, toe*." And it was quite a time before I could make him comprehend the difference between "toe" and "stove." His mamma made him comprehend it, however; and when I came home he was very much pleased to tell me that there was the *stove* over there, and here was a *toe* right down on the little foot.

The weather has been very cold for a few weeks, so he could not get down to the pond, and his greatest delight has been to visit the little greenhouse that belongs to the factory. We all have dinner at the factory, with the hands; and after dinner I have generally taken him down to the greenhouse, then let him see the big engine when it starts up at half-past twelve. After about three times he learned the programme, and so he would

begin along in the forenoon to tease. "Dimmy, papa: dimmy, papa." He would keep saying it over and over; and finally when his mamma took him over, after a bite or two, he commenced, "Papa, gagen," meaning that he wanted to see papa's garden; and the dinner wasn't anywhere, in consequence, compared with the wonderful sight in the greenhouse, of the little plants just pushing through their earthy covering, and enlarging day by day, so rapidly that even his little mind comprehended that very soon there would be "num nums" to eat. No wonder he loves the garden. During these sunshiny January days, when the thermometer is down to zero, or lower, the "gagen" is even to me the most enticing place I know of.

A few Sundays ago he got hold of one of my collars of the previous week, and got it around his chubby neck, and was happy for a couple of hours in the possession of a "callow" like papa's. The next Sunday, just as soon as it was evident that I was going to stay with him instead of going off to the factory, he began to tease for "callow" again, and now he calls every thing "callow." Even the white wristbands are "callows," with every thing else of the sort. The same way he calls every puddle of water a pond, even if it is not bigger than a cow-track. Bodies of water are ponds, and he never tires of talking about ponds, and having every thing pertaining thereto explained to him.

Now, then, what a wonderful opportunity of teaching truth, purity, love, and kindness! Do you see it? Suppose his little ears are witness to quarrels and harshness, obscene and blasphemous words, cruelty and falsehood, is it not fair to presume that he would catch hold of these things just as quickly as he grasps holds, and dwells on "gagens," "callows," ponds, and the like? Shall we not, then, be very very careful?

But whoso shall offend one of these little ones which believe on me, it were better for him that a mill-stone were hanged about his neck, and that he were drowned in the depth of the sea.

500 LBS. OF HONEY FROM 15 SWARMS OF BEES.

I am a father's boy. We have 15 swarms of bees. We got 500 lbs. of honey. C. H. GETTLEY, age 13, Wooster, O., Nov. 30, 1884.

FROM 25 TO 27, AND ONLY 125 LBS. OF HONEY.

My father has 25 hives of bees; he got only two natural swarms. It was a very poor season. He took only 125 lbs. of honey. CARRIE WILLIS, Yocumtown, Pa., Jan. 1, 1885.

SARAH'S SHORT LETTER.

Uncle John keeps bees, and he made a bees-cellar. My uncle's name is John Walden. He has your bee-book. SARAH D. BARLOW, Northfield, Minn.

3200 LBS. OF HONEY FROM 77 STANDS OF BEES.

My pa has 77 stands of bees; we took 3200 lbs. of honey. Pa gave me 5 stands of bees, and somebody stole one. Ma and pa went to California, and they went to the ocean and Cliff house and saw the sea-lions. The bees were working on the gum-tree blossoms, and the bees that they have out there are little black fellows. PAUL LATHAN,

Papillion, Neb., January 24, 1885.

A LETTER FROM A 7-YEAR-OLD FRIEND.

I have been reading about Huber to-night. I have to stop and laugh a little, and then I lose the place. Please write more about him.

Key, O., Jan. 16, 1885. NORA NEFF, age 7.

A COLT THAT WILL SHAKE HANDS WITH THE BOYS.

I am a farmer's daughter. My pa keeps bees; he has 16 swarms. I go to school, and help my ma do the work nights and mornings. We have a colt here, and it gives the boys its front foot, to shake hands with them. It is a great pet.

Yocumtown, Pa. CECILIA FETROW, age 10.

TWO LITTLE LETTERS FROM TWO LITTLE BOYS, JUST AS THEY WROTE THEM, AS NEAR AS WE CAN FIX IT.

I AM A LITTLE BOY SIX YEARS OLD MY PA KEEPS BEES THEY ARE NOW IN THE CELLAR. IN THE SUMMER HE KEEPS THEM IN THE BEE HOUSE GARDENVILLE, NY HENRY LEHDE

I AM A LITTLE BOY FOUR YEARS OLD MY PA KEEPS ITALIAN BEES I HAVE A LITTLE SISTER TWO YEARS OLD SHE HAS BLUE EYES WE ALL LIKE HONEY EDWIN LEHDE

GARDENVILLE NY JAN 22 1885

WILLIE'S SAD LETTER.

My father keeps bees; he has 26 colonies. They did not do very well. Last year was almost a failure. My pa had lots of discouragement last summer. Our house burned down, and we lost our little sister. I go to school every day, and Sabbath-school.

WILLIE SHILLING, age 11.

Jewett, O., Jan. 26, 1885.

FRANKIE'S ACCOUNT OF THE WAY THEY CATCH LAKE TROUT UP IN MICHIGAN.

I live near Lake Huron, which is one of the largest fish-ponds in America. When there is ice on the lake, men cut holes in it and let down a little wooden fish, and the lake trout gather around it, and the men spear them. Papa takes GLEANINGS, and likes to read the children's letters.

Oscoda, Mich. FRANKIE F. BRADLEY.

DORA'S LETTER—4800 LBS. OF HONEY FROM 94 COLONIES.

Pa has a farm of 80 acres, and he keeps bees. He has 94 colonies. He got 4800 lbs. of honey last summer. He has got a horse-power and sawing-machine to make bee-hives and honey-boxes. I like to see him saw. I have two sisters and three brothers, and we have an organ.

DORA TENANT, age 10.

Eureka, Wis., Jan. 23, 1885.

NIGGER, THE DUCKS, AND THE DINNER.

Papa has 4 bee-hives; he commenced with one hive. I have a cat and a dog. My dog's name is Nigger, and he killed two ducks. La! but we had a good dinner.

JOHN C. HUGHES, age 12.

TWO LITTLE LETTERS FROM TWO BROTHERS AND SISTERS.

Uncle Amos, I read in papa's GLEANINGS about little children writing to you, so I thought I would try. I have a little sister. Her name is Lydia. I have some ducks. I go to school this winter. I have been sick, and I have been having lots of fun since I have got so I can use playthings. I have 2 chickens; they are pets. GERTRUDE HALL, age 7.

Papa has had very good luck with bees. He says he will make a fish-pond. He has a very good place.

I think one of our neighbors says he would not take \$100 if he had it.

CHARLEY HALL, age 9.

Boothsville, W. Va., Jan. 30, 1885.

A REPORT DISCOURAGING.

My brothers have 3 hives of bees. I like honey, but we did not get any this year. Can I have a book? I am five years old. WILLIE CLEVELAND.

Collamer, Cuy. Co., O., Dec. 9, 1884.

Well, Willie, it seems to me that is a little sad. Your brothers with three hives of bees did not have any honey to give you at all.

SIX-YEAR-OLD ADDA'S LITTLE LETTER.

Well, Uncle Amos, I am a little girl six years old. My pa keeps bees. He has two colonies. He got 1800 lbs. of honey. It was in the comb. I have a little bantam rooster. He weighs 11 ounces. His name is James Blaine.

ADDA BROWN.

Sebewa, Mich.

2500 LBS. OF HONEY FROM 75 COLONIES.

My father keeps bees; he has 75 swarms; we had 2500 lbs. of honey. We have them all in the cellar. I have 4 bantams. My sister and I have a black calf; her name is Hollie. I like the book you sent me.

LUCY TALCOTT.

Owego, N. Y. Feb. 1, 1885.

SAMUEL'S CONTRIBUTION IN THE WAY OF VALUABLE FACTS.

We have a cow that had a great big wart in her ear; so pa said that if I would take it off he would give me a quarter. So I applied kerosene oil every other day, and I took it off in about three weeks. If this is worth a book, please send me the Roby Family.

SAMUEL L. BURNETT, age 14.

New Vernon, Pa., Jan. 15, 1885.

Very good, friend Samuel. If kerosene works on all the cows as it did on yours, the idea is certainly worth a five-cent book.

LOUISA'S REPORT.

We had 500 lbs. of white-clover and basswood honey, all in one-pound sections, and about 75 lbs. of dark honey. It is all sold but 24 boxes of white-clover honey. We sold it all near home—the white-clover and basswood honey for 16 cts. a pound, and the dark for 12 cts. The above is from 7 colonies of black bees. Our bees are wintering on summer stands, packed with forest-leaves around them. They had a good fly last week, and are all right.

LOUISA A. RINDSACH, age 13.

N. Ridgeville, O., Jan. 13, 1885.

EVA'S IDEAS IN REGARD TO LOW PRICES.

I live with Mr. Packwood, and he has bees. He made about 15 barrels of honey this season. The bees made plenty of honey; but the trouble is, they send it away, and do not get a good price for it; but I suppose you know that yourself. Don't you think it is hard for men that work as hard as they do? But, however, they keep up spirits, and I think there will be a good many bee-men this summer. My papa is going to have a few hives for his own use. I hope he will, for I like to tend to them myself.

EVA S. GLAWSON.

New Smyrna, Fla., Jan. 12, 1885.

Why, Eva, I suppose it is only human to want a good price for every thing we have to sell; but then, you see when we want to buy something that somebody else raised, we rejoice at low prices, and so there are two sides to the question. Now, I suppose

the golden mean would be about such a price as would do the most good to all classes of people, and that would be what we call a *fair* price, would it not? Low prices are hard for the producer, but a blessing to the consumer; so it is not all a misfortune when prices run low.

TEA AS A HONEY-PLANT.

I thank you for that book you sent me. Our bees have been at work for the last two or three weeks, and we have had pleasant weather this far. The bees have been bringing in pollen and honey. I have seen them on roses, tea-blossoms, and palmettos and peach-blossoms. I send you a tea-blossom. May be you have never seen any before. I hope the blossom will reach you in good order.

Francis, Fla., Jan. 4, 1885. CHARLES LEYVRAZ.

Many thanks, my little friend, for the tea-blossom. Isn't that a novelty, that bees work on the blossoms of the plant that bears the tea we use on our tables? I wonder if we hadn't better run opposition to the brethren in China, and commence raising it so as to get honey.

THE WAY JOHN HATCHES QUEEN-CELLS UNDER A SITTING HEN.

Our bees are all in good condition now. I forgot to tell you that we had 49 colonies of bees and two Italian queens in nucleus boxes. The little swarms died. I put the royal cells in small wire cages when I put them under the old hen. We have a good place to sell queens and honey too. Our bees can not make enough honey to fill orders. We charge \$1.00 for untested queens, and \$2.00 for tested. I thank you very much for that book you sent me. My leg is all right now. I go to school. I went into a larger spelling-book to-day. JOHN ROBERTS.

Schoolhill, Wis., Jan. 26, 1885.

NELLIE'S LETTER, FROM A TOWN WHERE A SALOON HAS NEVER BEEN KEPT.

Papa kept bees in Iowa, and now we intend to keep them in Nebraska. We came out here last fall and brought one swarm with us. They are still alive, and out for a fly yesterday. Some people say bees won't live here; but I guess they will if they get a chance. Papa had 20 swarms in Iowa. I have been reading some in natural history, and it says that cucumbers and squashes won't grow without the bees; is this item new and useful? And now I want to say a word for our fast-growing town. Our town lies on the Burlington railroad; has 700 inhabitants, two churches, and a Congregational academy. There is not, and never has been a saloon here; and if any of your readers wish to go west, and would like to give their children a Christian education, Franklin is the place to come to.

Franklin, Neb., Jan. 31, 1885. NELLIE FAY, age 10.

Well, Nellie, your concluding fact is not only valuable, but it is a cheering and encouraging one.

KEEPING BEES TOO WARM IN WINTER.

My pa has 11 swarms, 6 in big boxes with old carpet and rags on top, and 5 in Simplicity boxes with leaves all over them. I must keep the holes open for the bees, my pa says so; my grandpa has 20 straw baskets with bees in, and big bundles of straw over them to keep them warm. Last winter 8 died. My pa says he makes them too warm. Is that so? Grandpa is 70 years old. I like him. He gives me

lots of apples and cider when I go up the valley to see him. I like to read the letters in your books that my pa gets from you. FREDDIE W. REX.

Lehighton, Pa., Jan. 22, 1885.

I hardly think, Freddie, that your grandpa keeps the bees too warm by covering them with straw. Is there not some other cause of their dying?—Somehow I feel a little sorry when you say you drink cider when you go to see your grandpa. Cider makes so much trouble with people who have a leaning toward intemperate habits, that most of the people nowadays have decided to get along without it. Don't you think it is a better way, Freddie?

MINNIE'S PET RABBITS.

I notice in GLEANINGS of Dec. 15, that Mr. Fradenburg sent you a pair of rabbits. Well, I will tell you about mine. Last summer, one evening I was sitting on the lawn, and my kitty came along with something in his mouth. I looked, and it was a little rabbit. Although it was a wild one, it made a nice pet. I fed it, and it grew so it could run around, and then we made a yard for it close to the house. We left it out at night a couple of times, and so one morning I went out to feed it, and could find it no place. Then I saw some fur and blood around in the pen, and we supposed it was a cat that killed it, for we saw a cat sneaking around the pen several evenings after that. Its name was Bunny. What were your rabbits' names? I felt very badly about it, but I will soon get a pair of tame rabbits. MINNIE RHODES, age 12.

Wilmot, Ohio.

Isn't it a little singular, Minnie, that your kitty carried the young rabbit in that way without killing it? I believe it is true, however, that cats do sometimes take care of rabbits, or even chickens, about as they would a kitten of their own. I am sorry to know that poor little Bunny was killed by a cat at last. We call our rabbits Bunny too, and you ought to see Huber tease to go and see them.

VERSES COMPOSED BY LITTLE 10-YEAR OLD CARRIE, ON THE DEATH OF HER BROTHER.

Mamma has 5 stands of bees, and papa makes beehives to sell. Mamma gave each of her children a stand of bees. My stand swarmed, but died. Papa packed his stands in planer shavings, and they kept well. I have a sister to play with. She is a little girl, but I love her very well. I have 8 brothers. The one that was our bee-man that helped mamma hive bees when papa is away from home died. The verses, I composed. I go to school; am in the fifth reader. I am 11 years old; I was 10 when I composed my verses.

IN MEMORY OF MY BROTHER.

There is a place to me most dear,
The evergreens are growing there.
My dearest brother there must be,
Although his form I can not see.
Four evergreens were planted there,
And they were growing green and fair.
When to this sacred place I strayed,
Behold! one evergreen is dead.
There is a vacant place, I said;
And in our home a vacant bed.
Then to this tree I softly said,
"You, like my brother, too, are dead."

REFRAIN.

We can plant the tree that will,
But brother's place there's none can fill.

CARRIE M. SWARTZ.

Schultzville, Pa., Jan. 26, 1885.

100 SWARMS OF BEES, SOME ROUEN DUCKS, AND A WHITE COON BESIDES.

Pa has 100 swarms of bees, and he raises and sells queens. My brother Byron caught a white coon. We have it for a pet. We have 9 big ducks. They are called Rouen ducks. T. PALMER BLANK.
Woodville, Ohio.

32 BELOW ZERO; KEEPING BEES IN A FRUIT-HOUSE.
We have 31 colonies of bees in the dooryard, and a few weak ones in their hives in the fruit-house. The thermometer marks six degrees below zero now, and day before yesterday it was 24 below. Yesterday morning the thermometer was 32° below zero.

HARMON K. HOCKETT, age 11.

Jonesboro, Ind., Jan. 21, 1885.

Now, my little friend Harmon, you have told something that I just want to know about—why will not fruit-houses be just the thing to keep bees? Please let us know how you winter.

ROSA'S BROTHERS AND THE BEES.

My brother had 6 stands of bees in the spring, and in the fall he had 14. Ma and I help him to hive his bees when they swarm. He has good luck with bees. They don't fight him and sting him any. He takes GLEANINGS, and I like to read it. One of our neighbors got him to take 11 stands of his bees. He is afraid of them himself, but he likes the honey. He will keep them for a share.

Downs, Ill.

ROSA CURTIS, age 12.

RAY AND HIS PAPA, AND THE 200 COLONIES OF BEES.

I am but a boy eight years old. My name is Ray. I go to school, and learn to read and write and spell, and mornings and evenings I help my papa feed the sheep and mules and cattle and pigs, and evenings I carry in the wood for my ma. In the summer I help my pa make sections and sash. My pa keeps about 200 colonies of bees.

Ada, O., Jan. 26, 1885.

RAY MURRAY.

DOLLY AND HER GRANDPA, AND THE 80 SWARMS OF BEES.

My grandpa has about 80 stands of bees, and they make lots of honey. When they swarm, sometimes they want to go away, and grandpa gets the queen and takes off part of one wing, and then she stays at home, and of course the rest stay with her. Perhaps my mamma will have bees some day, and I will know more about them, and can write a better letter.

DOLLY OBENSHAIN, age 9.

Bloomington, Ill., Jan. 26, 1885.

FROM 40 TO 75, AND 1800 LBS. OF HONEY.

My papa has 75 swarms of bees; he had 40 to begin with last spring. Mamma hived 3 swarms of bees last summer. Papa buried some last fall. They are keeping nicely this winter. He had 50 swarms once, and they all died; but he got some more. The bees made 1800 lbs. of honey last summer. I pieced a quilt on the machine. I have a large doll. I wrote this letter all alone. I have been to school for 8 months.

LINNIE E. DOANE, age 8.

Pipestone, Mich., Jan. 26, 1885.

RESUSCITATING BEES FOUND ON THE SNOW, BY WARMING THEM.

We started with two swarms of hybrids last spring, and increased to six. Papa found some apparently dead bees on the alighting-boards of his hives, and brought them into the warm house, and

put them into an observatory hive, and many of them revived, which proves Mr. Swinton's advice about queens to be good. Papa set some boards up in front of his hives, to keep the sun from shining in and tempting them out these cold days.

LUNA A. PARKER, age 12.

Lockport, N. Y., Nov. 25, 1884.

PLACING THE ENTRANCE TO THE NORTH, ETC.

My name is Edith Mindwell, and I have a brother called Roswell. We have a large raspberry-patch near the bee-house. I go to school, and I am in the fourth grade. Papa thinks his bees do better facing the north, winter and summer.

E. M. PHELPS, age 10.

Galena, Md., Jan. 24, 1885.

Perhaps your pa thinks that, by placing the entrance to the north, the bees are not so apt to fly out during unseasonable weather. Is it not so, friend Edith?

A CURE FOR BEE-STINGS.

My name is Roswell Phelps. I help my papa pack his honey, which he sent away in boxes. He bought the boxes of you. I try to help my papa and mamma a great deal. I know a cure for bee-stings. When a bee stings you, suck out the poison, or get some one else to do so. ROSWELL PHELPS, age 7.

Galena, Md., Jan. 24, 1885.

Perhaps, my little friend Roswell, sucking out the poison, or trying to, won't do any harm; but I believe I would rather let it alone, and not do anything after getting out the sting. If one *must* do something, however, I do not know but your remedy does as well as any.

HATCHING QUEEN-CELLS IN AN INCUBATOR.

Last summer pa and I hatched queens in the incubator while we were hatching chickens; and when we had hatched all of them, pa made a queen-incubator, and put it on top of a hive, and filled it full of queen-cells; and when a colony did not have any queen we would take one out of the incubator and put it in the hive. This may not be new to you, but it may be useful to some of the other writers. I hope the writers who have incubators will try it next summer. Pa and I think it is a better way than to let them hatch in the hive.

EDGAR KENNEDY.

Montclair, Hendricks Co., Ind., Jan. 23, 1885.

A LETTER FROM A LITTLE ORPHAN GIRL.

I am a little orphan girl 11 years old. My home is with Mr. Eli Reeves. He got me out of the orphan home in Louisville. I call him papa. He has 31 stands of bees now. Last spring he started out with about 15. I think he forgot to keep account of the honey. I am very fond of honey. We don't use any tobacco at our house, but papa smokes. I am afraid of the little bees. I have been stung some two or three times, but think I shall get used to it.

MAUD FRENCH.

Cayce, Ky., Jan. 26, 1885.

BEES, STRAWBERRIES, TURKEYS, STEAM-ENGINES, ETC.

My brother Christian keeps bees. He has 32 colonies. My brother John has one colony. He paid one dollar for it. He paid 10 cents for a queen-cell. He gave me two frames of hatching brood. I sawed out the boards for a hive. My brother Christian nailed it together, so I have one colony. I packed it outside with straw, inside with chaff. My brother

Christian raises strawberries. I go to school; we have a good teacher. We have an engine from Massillon; it works well. We raise poultry. We sold some turkeys. CONRAD E. WICKESSEK.

Marshallville, Ohio, Nov. 27, 1884.

ROBERT'S COMPOSITION ABOUT BEES.

The bee is as large as a horse-fly; they are very industrious insects. Wild bees live in hollow trees; tame ones live in hives. They make honey from the sweet-William, roses, columbines, daffodils, sun-flowers, pinks, goldenrod, buckwheat, and linn. They get rid of all the drones in the fall; they do not want them to eat the honey that they did not help to gather. They will not sting you if you do not harm them. Bees are found in most parts of the country. There is but one queen in a hive.

Glidden, Ia.

ROBERT DREW.

A FOLLOWER OF THE SAVIOR ALTHOUGH BUT 9 YEARS OF AGE.

I see in a catalogue you sent papa, that you had two kinds of cards you send to little folks free of charge—one kind against profanity, and one with a child's prayer on. Will you please be so kind as to send me some of both kinds? I am a little girl nine years old. I know the Lord's prayer by heart, and say it every night. I am very anxious to see the little prayer you have so kindly selected for little folks. I am trying to be a good little girl, so that the Savior will be pleased with me every day.

DORA L. B. FISHER.

Salisbury, N. C., Jan. 26, 1885.

JENNIE'S LETTER ABOUT THE PEACHES.

My papa has bought 3 colonies of Italians and 4 colonies of black bees, so you see we intend to raise bees, and have honey in our country home. We have a great deal of fruit. Our Amsden peaches get ripe June 1st. Would you like a box about that time this year? We enjoy reading GLEANINGS, and especially the boys' and girls' column. We all go to Sunday-school.

JENNIE C. REED.

Huffman, Ala.

To be sure, I should like a sample of your peaches, friend Jennie, and they would be a great novelty here, I tell you, at any time in the month of June. Many thanks for your thoughtfulness of Uncle Amos.

FROM 9 TO 17, AND 350 LBS. OF HONEY, ETC.

We began last spring with 9 colonies of bees; increased to 17, and got about 350 lbs. of honey. It was not a very good season for honey. Pa got a Holy-Land queen of you last July, and raised a queen from it, and the one he raised began to lay in September. We have got her in a nucleus, with about a quart of bees, and they have wintered well so far. Pa feeds them candy. We hatched a queen under a hen last summer. We took a little box, and put a few small holes in it, and then lined it with cotton, and then put the queen-cell in the box. Last summer two swarms came out together; and when pa tried to hive them they both went back to their old hives.

ELLEN YOCUM, age 12.

Riverton, Ill., Jan. 24, 1885.

WHAT A 5-CENT MOUSE-TRAP DID AWAY OUT IN CALIFORNIA, ETC.

We got a 5-cent mouse-trap of you, and we have caught twelve troublesome mice already. California is a good place for bees. They are working even now in the flower garden, on pea flowers and blue-gum flowers. We didn't have much nice honey in

1884. Our best honey was sage in the comb, but most of that we had was "hot." One day when we were eating dinner my papa and brother Alfred were not at home, and suddenly we heard a swarm of bees passing. We jumped up and followed them one-fourth of a mile, and threw some dirt at them. Soon they settled on a small tree; my sister and I got a hive, and shook them into it. We had a little trouble with them, but managed to get them home early next morning, only to find the hive empty. They were a "crazy swarm," and had left.

LILLIAN HINDE, age 12.

Anaheim, Cal., Dec. 26, 1884.

40 KINDS OF TAME STRAWBERRIES, AND SOME OTHER THINGS.

My father has 40 colonies of bees. We have 40 kinds of tame strawberries, and a great many kinds of raspberries, blackberries, and grapes. We live on a farm of 153 acres, and it is about 5 miles from Mendville. I can not tell how old Harvey Baer is. Father says there is an error in it. Papa is an old teacher. I have no brothers nor sisters. Our hired man's name is Jim, and he has worked for us four years. Papa is secretary of the Farmer's Club, and writes for papers, so I will write for your paper. Mamma said that if I wrote for your paper again I should tell you how many pounds of honey we got this year.

CLARENCE H. LEFEVER, age 10.

Hayfield, Pa., Jan. 27, 1885.

In Harvey's problem, he should have omitted the three first words, and begun with the fraction $\frac{1}{2}$. Of course, the whole of a thing plus a part of it can not equal the thing itself. His age is 12.

HARVEY'S PROBLEM, AGAIN: A GOOD REPORT.

As I have worked out Harvey's example, which gives me 12 years, which I think is correct, I will send our report for last year. We increased from 60 to 100 hives, and took 4000 lbs. of honey, mostly extracted. The bees stored a nice lot of bitter honey, in the fall, which was not fit for table use, but is fine for wintering bees. They are all in fine condition. They were bringing in pollen from the elm on the 10th of Jan. CLAUDE E. BROGDON, age 12.

Bryan, Texas, Jan. 23, 1885.

Friend Claude, you will see by the letter above this, that your answer is correct.

\$22.60 WORTH OF HONEY FROM ONE HIVE IN ONE SEASON.

Pa is a bee-keeper, and has been keeping bees since 1875. He has between 50 and 60 colonies of bees, and has had as high as five swarms a day. The best he ever had from one hive in one season was 16 large boxes of honey that he sold for \$22.60. Pa has a large-sized extractor that he ordered from Cincinnati. He has a shop, and he makes all of his bee-hives, frames, boxes, and does all of his painting. I have to watch the bees; and when they swarm, and pa is not at home, I have to hive them. I have been stung hiving them but once or twice in my life. One day when pa was gone, and I was too little to hive bees, ma hived four swarms in one day. Pa has a bee-smoker, but he did not get it by quitting the use of tobacco. He smoked and chewed seven years, and thought it was hurting him, and he quit ten years ago last May, without a smoker, and has not tasted it since. He neither smokes nor chews, nor drinks any intoxicating liquor or coffee. He is a wholesouled Prohibitionist. He

says any one can, if he will, quit the use of tobacco and whisky. Please send me cards against profanity.

ALICE JONES, age 14.

Sedalia, Mo., Jan. 31, 1885.

WHY HONEY FROM SPANISH NEEDLE DOES NOT CANDY THIS YEAR, ETC.

Our bees have been shut up for two months, on account of cold weather, with the exception of one day two or three weeks ago, when they had a fly in the middle of the day. They showed signs of a great many dead ones. All the bees in this part are on their summer stands, and generally without any protection. Will you please tell me why pure Spanish-needle honey doesn't candy this year?

Iola, Ill.

CORA LONG.

I do not know why the honey does not candy, friend Cora. That seems to be an accidental property. The honey from some plants remains persistently a liquid; and, again, the honey from the same plant will candy one season, and the next season it will not. I suppose that, by some accident in nature, the honey that does not candy contains a different proportion of dextrine in its make-up. The lot that does not candy is like the liquid glucose, and that that does candy is more like its solid near relative, grape sugar.

LAURA'S LETTER ABOUT HER PAPA, WHO IS DEAD.

I go to school. I study reading, spelling, and writing. I have two brothers, one 16 years old and one ten, and two little sisters. My papa kept bees. He is dead now. He died last May. Oh how we miss him! We have 16 colonies of bees. Mother takes care of them. She wants to sell most of them, as she is not able to take care of so many. Our bees didn't swarm much last summer. My papa used to take GLEANINGS, and we all liked it. We would take it now, but mother thinks she is not able to. My papa was a soldier, and got a pension, now we get it. We are getting along pretty well. I should like to read some of your nice books.

LAURA WILLIAMSON, age 7.

Willow Island, W. Va., Jan. 29, 1885.

May God help you, my little friend Laura, and your poor afflicted mother, and all the rest of you, in your loneliness. By reading your little letter I was led to wondering what little Huber would say, and how sad he would feel, if his papa were taken away as yours is; and while reading it, it seems to come over me as it never did before, what a sad, sad thing it must be for little children like you to lose their dear papa, nevermore to see him in this world. Tell your good mamma that I will gladly send her GLEANINGS for one year, for your little letter, and I will send it to her with the prayer that it may help her some with the bees, in the absence of that companion whose place nothing in this world can ever fully supply. May God's blessing be with you all.

BEE-KEEPING FOR SCHOOL-TEACHERS.

Two years ago papa put camphor gum in the hives, and he didn't have any trouble with the moths, and this year he kept neglecting it, and the moths killed two or three swarms. Last summer he had only 15 swarms, and now he has 24. In the summer he lost three swarms, which left. Sometimes he has two swarms come out at once, and they all cluster in one place. My eldest sister at home is

learning to hive bees, and she is teaching school this winter. She thought teaching and bee-keeping would go well together, because she said she could teach in the winter and tend to the bees in the summer. As they have only seven months of school, five for the winter term and two for the spring term, she thought she would have time to tend to bees in the summer.

DAISY PHELPS, age 12.

Springfield, Ill., Jan. 20, 1885.

Friend Daisy, I think bee-keeping will be tiptop for your sister, for any man or woman who can take care of a school full of children would probably be able to manage the honey-bees.—You do not want any camphor about your hives, to keep moths away; in fact, I do not believe much in medicine of any kind to keep away insect-enemies. Have your hives so they can be opened easily and quickly, and give the bees a fair chance, and they will take care of the moths themselves, and I believe the same rule will apply to insects that trouble our plants and vegetables. Give the plants such a good start in life that they will take care of themselves in spite of the insects. With potato-bugs, pitch into them with such vehemence when they first show their "noses," that you scare them to death in the outset, and save the money you would have to pay for Paris green. I do not believe the camphor would bother the moths at all.

TEACHING MAMMA TO SKATE ON THE CARP-POND.

I like your description of the carp-pond. I went to skate on my papa's pond, and fell and cut my knee so badly that I have been a cripple for some time. I will not skate any more this winter. Papa took mamma down to the pond to skate, but she tumbled around so she kept the children laughing themselves almost to death. He gave it up as a bad job, trying to teach an old lady to skate. She was raised where there was neither snow nor ice. I should like to pull Huber and my little brother on the sled. My brother is older than Huber.

HOW TO CURE FROSTED FEET.

As there are so many people with frosted feet this winter, I will tell you a cure for them. Get the green moss off the roots of the forest-trees; put it in a pot, and cover with water. When it boils, place the feet over the pot while the steam is rising; keep a blanket wrapped around, to keep the steam in. It will be painful for a few minutes, but will cure them.

PEARL TYLER, age 9.

Knob Noster, Mo., Jan. 25, 1885.

You see, Pearl, your mamma did not learn how to skate when she was a girl. Huber's mamma was brought up right close to a river, and she learned to take to ice as ducks take to water. I think what we learn when we are children we seldom forget. Don't you think, Pearl, we ought to be very careful what we learn when we are children?—About your cure for frosted feet, I can not think the moss has any thing to do with it whatever. Suppose you try it without the moss. I am sure you will find it works just the same, unless somebody has so much faith in the moss that it is the *faith* that performs the cure; or, at least, they imagine they are cured, and without the moss they would imagine they were not cured. I do not mean that people are not honest, but only that they get notions sometimes.

OUR HOMES.

Fear not, little flock; for it is your Father's good pleasure to give you the kingdom.—LUKE. 12: 32.

I WANT to talk to-day principally to those out of employment. Those who have plenty to do, and whose time is fully occupied, may listen if they choose; but a large portion of my talk will perhaps not interest them particularly, unless it is through sympathy for their less fortunate fellow-men. Thousands are out of employment, and wanting something to do. I have been told, that in the city of Cleveland alone there are 15,000 people "out of a job," as the saying is. Perhaps many of these are Christian people—people who belong to the various churches, and who are trusting God. How comes it, then, that they should seek in vain for something to do? "By the sweat of thy face shalt thou eat bread," is the command; and yet many all over our land are feeling sad because they can not obey the God-given decree; or, at least, they think they can not, and I hope you will not think me uncharitable when I suggest that people many times make a mistake when they say they can not find any thing to do. This is an old subject, I know, and it is one on which I have talked and written quite frequently, and may be the place which I occupy has a tendency to make me a trifle uncharitable; but every year that is added to my life, strengthens and confirms the position I have been slowly taking, that those who are consistently trusting God will seldom if ever be out of employment; and I can not have very much sympathy for a big strong man who tells me he has searched everywhere, and can find nothing to do. Feeble women, a great many times, seem to have fulfilled almost all the requirements, and yet find difficulty in getting any kind of honest work that will pay even moderate wages. Many times younger people, too, from want of judgment, or because of their youth and inexperience, seem to fail in their efforts to find something to work at. There is another class of people with some property, who become restless and discontented, and say they have nothing to do, and long for something to work at. Sometimes a suggestion, or a little assistance to such, may do them much good.

Did you ever wonder, dear reader, what is to be the ultimate end, if the population of the earth keeps on increasing as it is increasing now? China has given us an illustration, to a certain extent, of the results of "overstocking" (if I may use the word) with the human family. I know some good people who seem to be a little frightened at the prospect; and suggestions have even been made that something ought to be done toward stopping the enormous increase of human beings. I say, these are good people, but I fear they lack faith in God. Our little text of itself ought to cover the ground, and ought to allay their apprehensions. The Creator who planned the universe, and this world with all the rest, certainly included all such contingencies in his plan. And then the question comes up, "What does he

intend to do with us, and what are his plans now?" You see we come on to the question of *trust* here; and before we get through I shall have a little more to say in regard to this. I think his plans are, that we should help ourselves to a much larger extent than we do now. When I see a great strapping youth, or a good stout girl, if you choose, mourning because nobody will give them a job, I feel like saying, "For shame, for shame, my friends. You have no business waiting for anybody to give you a job. Go and get a job yourselves." Very likely the reply would be, "Why, the factories are all full. I have been here and there, and been everywhere, and nobody wants to hire." A big stout German boy told me yesterday he could not get a job anywhere. Just before he came in, a stout strong young man, whose acquaintance I formed in our county jail, came to me saying the same thing. Said I, "Have you been around to the farmers, and inquired for wood to chop?" They both replied that they had, but they could not get a bit of work anywhere. The next day Neighbor H. informed me that he found a whole row of men sitting on the hitching-posts in town, waiting for something to do. Not one of them would go and help him in the woods, during these short winter days, for less than \$1.50 per day. Now, I have no sympathy at all for any one of this class who is out of a job. They ought to be out.

A few weeks ago, one of our neighboring factories shut down, and, of course, many were wanting something to do. A couple of stout young men came to Neighbor H. for something to do, and he told them if he could get wood cut for 50 cents a cord he would set them at work. They cut for him all he intended to have cut, and then made an offer to cut another lot at 45 cents a cord. He took them up, and they were off through the snow before daylight, and worked as long as they could see—worked like "beavers," so he says, and made, perhaps, not much over a dollar a day. This they did while their comrades loafed around the town, probably engaged in sowing the bad seeds, which I have spoken of in another page. Their factory is running now, and, of course, they can do better than to chop wood. But Neighbor H. told me yesterday I might tell every man or boy who came to me in distress, that they could all have wood to chop at 45 cents a cord. Now, then, boys, I presume if I myself were obliged to go out and chop wood at 45 cents a cord, I should not make more than 25 cents a day—at least, for the first few days; but rather than sit around, and say I could not find a job, I would work for the 25 cents a day, willingly; yes, I would work for *twelve and one-half cents a day*; and if I did not earn enough to pay my board, I should at least have the satisfaction of feeling I paid part of it.

I have been accused of being extreme in my views, and perhaps I am; but, thank God, there are a good many who are ready to follow me with their coats off, and their sleeves rolled up, metaphorically speaking. The extreme thing I am going to advocate now is, that we should not only work hard

during all the daylight, but that we should devote our evenings to something that will do us some good, or, better still, that will do our fellow-men some good. I know a great many of you say, "The way we have to work, we are glad to sit down and rest when night comes." My friend, how does your wife or mother do when she sits down to rest at night time? I know of one wife and mother who sits by my side, and darns stockings and such like, after ten o'clock at night too, a great many times. Some of the brethren and sisters employ their time evenings playing progressive eucher—may be you have seen it mentioned in the papers. Well, I have not time to say much about it just now; but I want to suggest something that I think will give you more real solid enjoyment than eucher—progressive or retrograde; and while you are doing it, you may be laying up treasures on earth, and, according to my way of thinking, treasures in heaven besides. To make my meaning clear, I want you to allow me to start off on another track a little while.

Last month I talked to you about being satisfied and contented with what you have already, instead of worrying and reaching and longing and grasping for something else. Well, I have been happy—exceedingly happy, in following out my talk there. Instead of dwelling on something I had not got, and ought not to have just yet, I have been rejoicing with my present possessions—with the things God has given me, and has given all along, that I had forgotten to notice. One prominent thing that I rejoice in is sunshine—I mean the real, genuine sunshine. God pours down upon us without stint, when the days are not cloudy, from morning till night. I always did love sunshine; but I love it more this winter than I ever did before in my life. I love the sun when it first peeps over the tree-tops. I love it because it is one of God's creatures; I love it because *he* sends it to make us happy; I love it because there is such a great lot of it. Of late quite a good deal is said about the sun cure. They cure sick folks by just putting them in the sunshine—nothing else. Well, I think it is good for well folks to be in the sunshine too, that they may stay well. A few days ago one of the girls was down in the greenhouse, looking at some new coleuses that we had just got from Peter Henderson. She said if we wanted the colors to come out bright we must keep them right in the sun, and then these cunning little plants (you know I talked to you about them a while ago) just delight in decomposing the rays of the sun, and sending out to us those gorgeous colors, blended in such beautiful harmony. The colors are simply bits of sunshine which they have caught and held. How beautifully sunshine starts the vegetable world into life! A lot of radishes were started in the greenhouse, with sifted moss and bone dust for a covering, on the plan Henderson gives in his catalogue. They were just peeping above the ground at noon. A little while after, the sun came out of the clouds, and poured his rays right down on them. In an hour or two they had bursted their mossy covering, and pushed

up into his genial rays, in a way that was to me perfectly astonishing. Huber and I both had a "jollification" over them. Well, the sunshine that comes down into that little greenhouse does a lot of good. Pretty soon it will perform the same kind of wonders outdoors, and we may make the broad acres that God has given us, smile and burst forth in bountiful harvests under the influence of this same sunshine. God, in his loving mercy, has given me about 18 acres of expanse on which I may catch sunshine. Under the benefits of modern science we can catch sunshine very much as we catch rain water. We can catch all that falls, if we have a mind to. That reminds me that I have been thanking God, too, for the rain and snow. All the rain that falls on my 18 acres is also my property, and the snow. I can have it to do what I please with it—catch it and make it run into carp-ponds, put it in the cisterns for the stock to drink, or use it for irrigating the plants and vegetables during dry weather, etc. And, by the way, it seems to me that every human being ought to have a little piece of ground he can call his own. I like the idea of having a little bit of land surveyed off and deeded to you according to the laws of our land. May be you can not all have that; but I have been learning to love old mother Earth so much lately that, if I could not have a little bit of real estate, I would have a *box full*, any way, and set it in the window.

Another thing I am thanking God for is the amount of fertilizing material for plants and fruits that is all round about us. When I was going to meeting last evening, the sidewalks were so slippery I walked in the middle of the road. We have had sleighing for about four weeks; and as I walked through town I noticed that the manure from the horses almost covered the white snowy surface in the middle of the road, so much had accumulated in four weeks. Well, this goes on accumulating winter and summer; and Henderson says if you can not get nice soil for plants handily, go and scrape up the dust in the road, over which many teams pass. The roads belong to everybody, and every citizen of the United States has a right to road dust—at least, he has a right to as much as accumulates in the way I have mentioned. If this road dust, when properly dampened for plants, has too much clay in it, make it light with rotten leaves, which nature has thrown about everywhere. Down among our maple-trees we got two large wagon loads of leaves in a short time, and we filled the Jersey cow's stable so full of leaves that, when she lay down on them at night, they almost covered her up. She looks real happy in among them, and expresses her happiness by giving all the milk we can use at home, and in the factory besides. I am thankful for the leaves that are on my 18 acres, that God has sent us. I am going to try to take care of all of them. I can buy manure at the livery stables for 75 cents to a dollar a load; but I feel a great deal happier in using all the fertilizing material that is to be found on our premises, than in paying out cash to somebody else.

There is a peculiar thrill that comes into almost every heart when one first sets foot on a piece of ground he can call his own. When I get tired of writing, or dictating, as I am doing now, I put on my fur cap, and overcoat, and go and look over my 18 acres. A creek runs through the middle of it. I love this creek, even if it does get rampant sometimes, and flood the low ground. There is an excitement in watching it, and preparing for it, and planning carp ponds that will not be injured much by an overflow. And, by the way, when we have a dull time in the fall I set the boys and the horses at work straightening and deepening the channel, and I am in hopes that, after a while, we shall get it so it won't go over the banks at all. Along this little stream we have a side-hill, and some rather steep banks. In one of these banks, protected from the winds, I mean to have a poultry-house, and we are going to push it back into the bosom of old mother Earth, where the "biddies" won't know it is zero outside. I suppose it would be better to have the front of glass, but I think we can make a very cozy place for them without going to the expense of glass, at least yet awhile.

For late strawberries, we want a northern slope. Well, we have got that on the south side of the stream. Alongside of the stream we have rich black loam, just right for celery and other water-loving plants. In another place there is a spring that comes out of the gravelly bed. The water from this spring is going to keep the carp-pond going when we have a drought. Why, almost every day I discover something on these 18 acres that I did not know I had before—something to feel happy about. And then, you know, whatever discoveries I make here are all mine—mine and God's. I know he likes to see me happy with them, for I can feel the sunshine of his love while I am engaged in this work. A great many farmers are deterred from making improvements, and developing the resources of their own possessions, by thinking that it *won't pay*. My friends, does it pay to sit still, and let your horses stand idle in the stable? I would not advise hiring help for work that is uncertain in its results; but I would advise employing your time, and the time of your team, in place of letting them stand idle. You can do this, and not be out of pocket, and a penny saved is a penny earned.

Now, what is there almost every one who reads GLEANINGS can do, with a reasonable chance of having it pay, and that he can do without expending money? What business can *everybody* go into without capital? You see, I begin to talk something like these advertisements in the papers that promise ever so much for nothing. Why, my friends, it seems to me the answer to this great problem is that, instead of going around to factories and shops for a job, we just go straight to God and take up the same kind of work that he first gave Adam and Eve, when he told them to earn their bread by the sweat of their face. Go to old mother Earth, and get a job of her. If you like keeping stock, go and take better care of the stock you have already got, instead of sitting idle. If

you are not the possessor of even a chicken, may be it will take some money to get a start; but God will give you the opportunity of earning money for this start, if you are in earnest. You can do almost all the work needed in raising poultry during these spare evenings, when you would be otherwise loafing or doing worse. You can get some dirt, and start some plants right off now, when this number reaches you; and you can buy seeds at five cents a paper, or even three cents, of some of the seedsmen. You can find boards around home to make boxes of, to hold the dirt; and the boxes can be in the window, if you have not any better place.

Neighbor H. once raised a wonderful crop of melons by sowing the seeds in boxes made of newspapers, and setting them in the window. When the weather permitted him to work in the ground outside, he set the paper box between two bricks, laid a pane of glass across them, then banked the dirt around them. The pane of glass was very easily slipped off or on, as the weather permitted, and he had melons about the time we get them from the South. Enormous prices are paid for extra-early fruits and vegetables, and you can make preparations for these in the way above indicated, and the work may employ all your evenings from now till time to work outdoors. I know some have complained that the markets are overstocked—their stuff won't sell. Well, if it does not sell, use it yourself. There are methods now of preserving and keeping almost every thing heretofore considered perishable. We have celery now on our table as nice as when first taken from the ground in the fall. All you have to do is to plant it in the ground in your cellar.

A great many people say they have not the faculty of making things grow—every thing dies they undertake to fuss with. My friends, you can learn to become an expert in making things grow, and the catalogues that are given away freely to everybody nowadays will give you all the instruction you need. A few months ago I hired an expert market gardener—at least, he was recommended as such. He killed my choicest strawberries by the lavish way in which he used guano, and killed my potatoes (as well as the bugs) by the lavish way in which he used Paris green. In fact, he used almost every thing much as the "hired help" uses butter and sugar when she goes into the kitchen. Then one of our own boys took a fancy to the greenhouse, and he has commenced cautiously, feeling his way with plants, seeds, fertilizers, and different kinds of soil; and now he is getting a good many things so much at his fingers' ends that he begins to succeed with every thing he undertakes, and he has had only a few months' practice. One who loves God, and loves these tiny seeds as they burst forth from their earthy covering, will be almost sure to succeed. Even if you fail, if you work as I have advised, you are out of pocket so little that you may almost say nothing. If what you raise won't sell, use it yourself; and though every thing is low, if we stop outgoes we shall be far better employed than in doing nothing.

My remedy for unemployed people will be to get them to go out of the cities into the country, and raise their own food; and rather than have so many thousands out of employment, I should say raise your own clothing as well. Go back to old times until there is a "let-up" on this crowding on to manufacturers. Very likely it would not pay one who raised food products to raise sheep, and spin and weave, as we used to do; and, in fact, clothing is so very cheap now—at least, comfortable and decent clothing is, that there can be little need of it. I know that people say, over and over again, that the stuff won't sell. To be sure, it won't, unless you sell it. Neither will potatoes dig themselves nor cook themselves. God does his part, and you are to do your part. When you have plants and vegetables ready for market, sell them as we do honey. Don't be above peddling them out among your neighbors; and when you go, if possible *take orders*. Pretty soon, instead of having to peddle you will simply have to *deliver* your stuff, and that is not unpleasant at all. When you have been "faithful in few things" for only a very little while (comparatively), customers will come to your doors and purchase. At a horticultural meeting, a member said recently that the best customers he had for strawberries were among the *farmers*, and in the small villages.

I know many will reject the course I have pointed out. Very well, friends. If you have something better to do than what I have indicated, by all means do it. But do not say again you could not find any thing to do. You can not be trusting God while doing nothing. You may find fault, and say, "How is a box of cabbage-plants and such like stuff going to support a family?" But, my friends, how is *doing nothing* going to support a family? The course I have recommended will show that you are willing to do your part, and being busy in some honest employment is a recommend to anybody who wants hired help. A business man seldom wants to employ idle people, as he has learned by past experience that it does not pay.

In connection with the thought that I have given in the fore part of my article, the statement was made that *many thousands* were fed or relieved from suffering at public expense; and I believe the statement was made that those receiving charity in the city of *Cleveland alone* were so great in number that it was safe to say that one individual in *fifteen* was a *pauper*. I am really afraid the aid given has, a great many times, done harm by encouraging people in idleness. It encourages them in declaring they won't do any work unless they receive a certain sum. This, to me, would be an indication in the outset that the one seeking work was wrong at heart. Better, a *thousand times better*, to work for 12½ cents a day, than to be the recipient of public charity.

A part of my talk to-day is not very bright and cheering; but now in closing I want to say something about a really bright, vivid trust in God; and I do not know any better way for any individual to show his trust in God than by showing a willingness to take

up any sort of duty, rather than idleness. Paul said he was ready not only to be bound, but to die for the Lord Jesus. We are not called upon to do Paul's work, many of us; but God does call upon us to raise plants, make garden, collect manure, peddle strawberries, and a thousand other such like duties, for the sake of the Lord Jesus Christ. Are we ready to do it? Are we ready to prove our trust in him in just this way?

A few days ago one of our evening meetings was concluded with the last verse of a little hymn. This hymn was a favorite of Rowland Hill, and he repeated it, or attempted to repeat it, with his dying breath. It is this:

And when I'm to die,
Receive me, I'll cry,
For Jesus has loved me, I can not tell why;
But this I can find,
We two are so joined,
That he'll not be in glory and leave me behind.

You notice, friends, the expression, "For Jesus has loved me." Our good friend was sure of that, even though he recognized that there was little about him that seemed lovable. And still further, his friendship and companionship with the Savior had been such during life that he had perfect assurance that the Savior would never leave him. Perhaps I can make it plainer by a little incident.

Although it was a cold, wintry day, almost down to zero, Huber begged so earnestly to go down to the pond that mamma bundled him up in his little sled, and I drew him off through the cold white expanse of snow. When I got down there I discovered the "Jersey bossy" could not get any water, and it was some distance to where I could find an ax to cut a hole through the ice. I explained to him what I wanted him to do, and that I would be back after awhile. He looked up at me with his blue eyes; and although he could not understand much that I said to him, he gave me to understand that he would stay until I came back. There he sat, a little speck, all alone by himself, away off in the field, just a baby. Do you think the idea ever entered his head that his papa might leave him there to starve and freeze, and never come back at all? Not a bit of it. All through the brief span of his little life, there had been such a friendship between him and his papa, that he knew, without being told, no power on earth could induce papa to leave him. Even if I *was* gone a very long time, his childish faith would never waver. He could not plead any merit of his own. There was no particular *reason* why his papa should think more of him than the Jersey cow, ponds, sunshine, or all this world could offer, yet in his baby heart he knew it was so; and therefore, even though I was gone a much longer time than I expected to be, he sat quietly and patiently, gazing off on the white sea one way and then another; and pretty soon, when he got weary of sitting still, he just lopped his little head forward, and—went to sleep. Why shouldn't he? He was so bundled up that he could not get out of the sled if he tried; and even if he did get out, he would make matters a great deal worse. If he should scream ever so loud, nobody could hear him. The *only*

thing to do was to trust his papa, and wait till he came back in his own good time; for he knew it was an utter *impossibility* that he should ever leave him where there was a chance of harm. Do you see the figure? "Consider the lilies, how they grow." When you are doing all you can, and all that God can in reason expect you to do, why should you doubt him, or lose faith?

Fear not, little flock; for it is your Father's good pleasure to give you the kingdom.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,
EDITOR AND PUBLISHER.
MEDINA, O.

TERMS: \$1.00 PER YEAR, POST-PAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, FEB. 15, 1885.

Behold, I give unto you power to tread on serpents and scorpions, and over all the power of the enemy, and nothing shall by any means hurt you. LUKE 10:19.

A BOOK ON SILK CULTURE FOR TEN CENTS.

We have one more book for the ten-cent library, and this time it is on silk culture. By mail, one cent more.

OUR BEES AT THIS DATE, FEB. 6.

DURING the recent warm spell, our apiarist carefully examined our 138 colonies, and found them all in good trim except one. This one had almost entirely natural stores last fall, so it was fed very little sugar syrup. Almost all the rest were fed quite heavily.

DECREASE IN THE RATES OF FREIGHT.

THERE has one good thing resulted from the general depression in business; and that is, that the railroads have, most of them, given us better rates of freight. Our friends will discover that, as a rule, freights are much less, and the late issues of our price list make mention of the reductions we have secured.

VERY LONG LETTERS.

I AM sorry to say it, but a very large heap of long letters is piled up waiting for me to get time to read them, and it will be nothing strange if I never get time in the world. Very likely some things of much value are among them, but I do not know that it can be helped, unless you come to the point at once, and make your communications brief.

WHITE-POPLAR SECTIONS, DOVETAILED ALL AROUND.

WE have been at some expense in getting the celebrated white-poplar lumber, and are now prepared to furnish sandpapered sections, equal to those made anywhere, we think, at the following prices: 100, \$6.00; five or more thousand, \$5.75; and ten or more thousand, \$5.50. Sections made so that 7 fill a foot of space, same price as above. If made of husswood instead of poplar, 50 cts. per 1000 less. Packed in boxes of 500 each. Less than 500, 3/4 of a cent each.

DISCOUNTS FOR THE REST OF FEBRUARY.

AS we have recently purchased quite a large lot of wax, at prices almost as low as it was offered in the fall, we will continue our discount of ten per cent on foundation until March 1st, and may be longer. Although sections are moving off quite rapidly, we have concluded to extend the discounts we have been giving on them, and on foundation mills also, until our next issue.

ADVANCE IN THE PRICE OF PEA-VINE, OR MAMMOTH RED CLOVER.

IT seems to me there is some difficulty in getting the genuine. On one occasion we sent to a noted seedsman for seed for a couple of acres; but when it came up it was common red clover. We have some that we know to be genuine, because it was raised by Neighbor H.; but instead of the prices in our price list, read \$8.00 per bushel; \$2.25 per peck, or 20 cts. per lb. If wanted by mail, 18 cts. extra for postage.

NICE HONEY AT A LOW PRICE, IN CONVENIENT PACKAGES.

IN friend Heddon's circular and price list, we noticed honey in 50-lb. kegs, at \$4.00 per keg. As the price is low, I, just to see what it is like, ordered a keg. The honey emptied out 53 lbs. 12 oz., and proves to be a very nice article of remarkably fine clover honey. Friend H. says in his price list he has 400 lbs.; and if it is not already gone, it ought to go very quickly at the price quoted. We have been a little prejudiced against kegs for extracted honey; but this came to hand perfectly clean, and without a bit of leakage. It began to leak some, however, after it had stood in a warm room three or four days.

SELLING INTOXICATING LIQUORS AT OUR STATE AND COUNTY FAIRS.

WE are pleased to extract the following from the *Farm and Fireside*:

The Annual Agricultural Convention of Ohio, held in Columbus on the 11th of January, resolved by a vote of 1614 yeas to two, out of sixty-one counties represented, "That the time has arrived when the public sentiment of the State demands that the State and County Boards of Agriculture should exclude from their grounds all persons and meetings."

In the whole convention, consisting of sixty-one voting delegates and a large number of non-voting members, but three yeas were heard in opposition to the resolution, and their opposition was made only on technical grounds; while of those favoring the resolution, several would be on their feet at once, claiming recognition of the speaker, in order to give its passage. The whole scene was a note making an Ohio farmer more than ever proud of his State and of his calling.

Not only an Ohio farmer, but it seems to me every loyal citizen residing in Ohio ought to feel proud of the stand just taken. May God grant that this regulation shall never be reversed.

HEDDON'S SLATED HONEY-BOARDS.

AFTER my remarks on page 98, last issue, had gone to print, it occurred to me that E. Kretschmer, of Coburg, Iowa, did, a great many years ago, have an arrangement for a sort of honey-board with slats to break the spaces made by the brood-frames; and as soon as the article in question met the eyes of friend K., he sent me an article giving the details of a patent, granted July 23, 1868. The article is too long for publication, and, in fact, I do not know that it matters much after all, only it is pretty evident that the device alluded to is not new. At present, GLEANINGS will not contain one-fourth of the matter sent in for publication. The trouble is, so many of the brethren make long stories of what ought to be told in a few words. We are willing to give space to matters of general importance

to the greater part of our readers, but we can not publish long letters that are likely to interest only a few, comparatively. Any one can have friend K.'s communication who cares to pay the postage on it.

UNTESTED QUEENS IN FEBRUARY AND MARCH.

Who is there among our friends in the South that are able to ship untested queens now? Let him speak out, and we will give him a free ad.

DON'T forget the bee-keepers' meeting at the Exposition in New Orleans on Tuesday, Wednesday, and Thursday, Feb. 24, 25, and 26. I shall be on hand the second day, nothing preventing.

THE EXPOSITION AND SUNDAY.

I AM informed that every exhibitor has the privilege of covering up his goods so that they can not be seen on the Sabbath-day, if he chooses. If this is the case, the matter is in the hands of the exhibitors to a considerable extent, and we may hope that Sunday exhibitions will be found so unprofitable that they will be discontinued.

A BOOK ON CARP CULTURE.

I HAVE completed arrangements with Milton P. Pierce, Secretary of the American Carp-Cultural Association, for writing me a book on carp culture. Mr. Pierce is perhaps the best authority we have on the subject in the United States, and perhaps the best in the world. The book will be fully illustrated, and the price will not exceed 50 cts., and probably not over 35. Further particulars will be given later.

OUR REVERSIBLE FRAMES.

THE machine for making our reversible frames is not yet completed, and we can not very well send out good samples till the machine is finished; that is, there are so many orders for them that they would cost a great deal more than we get for them, made by hand, and they wouldn't be very nice either. The engraver is at work on a cut, but we are obliged to go to press without it. Devices for reversing are coming in by the score; but a great many of them are only repetitions of what have been figured and described in our back numbers. Before you waste much time in inventing, dear friends, it will be well to post yourselves in regard to what has been done already.

OLD BONES.

YES, what do you do with them around your house? We have just commenced saving all of ours, and in the adjoining town there is a mill where they grind them up for poultry, and for fertilizing purposes. We just got a bag full, and I thought it looked a little coarse for plants; but I mixed in some with a box of nice soil, sprinkled on some radish seed, then a little more bone meal, and over all some dried moss rubbed up fine, and sifted on the seeds with a sieve. The whole was placed in the greenhouse, in the sun. In just four days the seeds were pushing the moss out of the way, to get up, and the bone meal had, in that short time, become so decomposed that it looked like a mass of mold, and the radish roots were pushing all in through it. Our bone-mill pays \$16.00 per ton for any sort of old bones. Chickens will eat them when ground up, as greedily as if they were coarsely broken grains of corn. Save the bones.

MOORE'S CRATE FOR HOLDING SECTIONS.

AS quite a good many seem to prefer this arrangement for placing sections over the hive, we have ar-

ranged machinery for making them at a low price. The only important thing in their construction is to have the partition-boards spaced so the $4\frac{1}{4}$ x $4\frac{1}{4}$ sections will exactly fit. To do this we have a saw-arbor arranged with thick saws, to cut grooves for the partitions to slide into. As the whole 5 grooves are cut at one operation, the crate is made very cheaply. The price of a single crate, nailed up, will be 20 cts.; 10 crates, \$1.50; 10, \$16.00, to which must be added the price of crating. Price of Moore's crate in the flat, singly, 15 cts.; 10, \$1.35; 100, \$12.50. These prices include the necessary strips of tin, and nails for nailing them up. An engraving of one of these crates will be given in our next issue. One especial advantage these have over the crate we have been using is, that it holds each section exactly square, and when filled with honey they come out all ready to go into the shipping-case, square and snug. These crates will go *inside* of a Simplicity hive.

REVERSIBLE FRAMES.

FRIEND HOWES, whose reversible device has been twice illustrated in GLEANINGS, claims that friend Heddon's arrangement is an infringement on his invention. Now, perhaps I am not the one to decide this matter, but this is certain: Although I examined Howes' device carefully when it was first submitted, and have studied a great deal on the subject, it never occurred to me to unite the two supporting arms by an extra top-bar, until I saw it in Heddon's article in the *A. B. J.* So far as I know, friend Howes was the first one to suggest pivoting the device to the center of the end-bar of the frame; but it seems to me, that as soon as a device should be called for, for reversible frames, this would be one of the first things to occur to almost anybody. If it did not occur to anybody until it occurred to friend Howes, very likely the idea would be patentable. Now, in case he does get it patented, as to whether friend Heddon's plan infringes or no, it seems to me lawyers might argue the matter a long while, and never settle it even then. We have never used the arrangement, and I do not think now we ever shall.

GILT-EDGE MEN AND WOMEN.

MAY be I have talked about this before, but something tells me it won't do any hurt to talk some more about it. In that big index-book to our ledger, that I told you about (the one that indexes a quarter of a million of people in our business transactions), we are obliged to record character, and grade character, as it were, and the grading runs all the way up from the man who coolly repudiates a fair and square promise, to those who are so careful of their commercial standing that they would almost pay something they did not owe, rather than have appearances against them. Once in a while we find a phase of humanity so fair and unselfish that I told the girls we wanted some way to indicate such men in that big index, and I proposed that we should call them "gilt-edge." A few months ago we changed the table giving the price of our foundation-mills, to a smaller-sized type, to give more room. One of our best men did it, who almost never makes a mistake; but this time he got the wrong figure, and made the price of a \$40.00 mill only \$30.00. Before it was discovered, some price lists had slipped off. A customer got one, and, not suspecting any mistake, sent \$30.00 for the mill. It was a fair and square bargain, so we sent it along, but said that the price was a misprint. He replied

promptly that we should charge him the proper price, and it would be all right. He did not want any thing of anybody for less than it ought to be, on account of a mistake. We have marked him "gilt-edge;" and what ever happens in future, we know the man means to be right, and that we shall never run any risk in trying to accommodate him to whatever he wants.

TAKING MEASUREMENTS.

NEVER use a rule or square, if you can possibly avoid it. Have a lot of slim sticks; and when you want the dimensions of something that needs to be very accurate, cut off a stick just right. If you want two dimensions, cut a notch in the stick for the second one. If the dimension is long, say the size of a door, lay two sticks together, slide one along the other until it just fits the opening, and tack them with a couple of slender nails, and you have it to a dot, without the trouble of cutting a stick. When I am hurried and worried, rules that shut up are a bother. When I want them open they are always shut up; and when I get them straightened out, they double up and flop around. On our 3-cent counter we have one-foot rules made without joints. This has a knife edge, as you will see by the cut below. It is also graduated and numbered.



OUR THREE-CENT ONE-FOOT RULE FOR SCHOOL CHILDREN.

I find these very handy, and I do not know but I would give a dollar for one, if it could not be bought cheaper. I keep one on my desk, and when I want it to measure any thing, I grasp it by the end where the figure 12 is. Now place the other end, where it says 1 inch, on the article to be measured, and you can read the dimensions exactly, in an instant. Besides the rule, I also have a yard-stick made in the same way. These are on the 5-cent counter. I always pick this up by the end that is marked 36 in., and place the other end on the article, and then I can read off the inches and fractions, without much chance of a blunder. These two rules, the one-foot and the three-foot, have proved to be so very convenient that I am going to have some on knobs just under the edge of my desk, with the end to grasp hold of sticking out so I can get hold of it in a second. The one-foot rule can be mailed for 2 cts. extra. The yard-stick can be mailed for 5 cts. extra, but I can not guarantee the latter against breaking in the mails.

VANDERVORT COMB FOUNDATION MILLS.

Send for samples and reduced price list.

tdfb JNO. VANDERVORT, Laceyville, Pa.

DADANT'S FOUNDATION FACTORY. WHOLESALE and RETAIL.
See advertisement in another column. 3btfb

IF YOU WANT

A GOOD ONE-PIECE SECTION CHEAP.

Send to us. Sample and Price List Free.

SMITH & SMITH, KENTON, HARDIN CO., OHIO.
2tdfb

FREE Our Catalogue and Price List
of leading Strawberry and Raspberry plants, Russian Mulberry-trees, etc. Also P. Rock eggs for hatching. Address:
4-5-6d YODER & METZLER, E. LEWISTOWN, MARI. CO., OHIO.

WANTED Wax to work into foundation by the pound, or for a share; also full colonies of bees for sale. For particulars address:
4-5d B. CHASE, Earlville, Madison Co., N. Y.

10-CENT FLOWER GARDEN

40 varieties seeds in each 10-ct. packet; 75 varieties, 25c. E. FERRIS, P. O. BOX 215, JERSEY CITY, N. J. 4

Foundation Machines, L. size, \$3.75.

Italian Bees, Queens, and Honey, a specialty. See new circular.

3btfb OLIVER FOOTER, MT. VERNON, LINN CO., IOWA.

PURE ITALIAN BEES.

FULL COLONIES, NUCLEI,

-AND-

QUEENS A SPECIALTY

If you intend buying bees or queens this season, send for my circular and price list. You will save money by so doing.

3btfb C. C. VAUGHN, Columbia, Tenn.

BEE-KEEPERS' SUPPLIES, BEE-BOOKS, & LE CONTE PEAR-TREES FOR SALE.

One pear-tree sent postpaid for 40 cents.

2tdfb T. A. GUNN, Tallahoma, Tenn.

FOR SALE!

CHOICE SEED CLOVER AND POTATOES.

	By Freight or Express.			
	bus	1	peck	lb.
Alsike Clover.....	\$10 00	\$2 75	20c	40c
White Clover.....	10 00	3 00	20c	40c
Hall's early peachbloss potatoes.....	1 25	50	15c	35c
Ontario.....	1 25	50	15c	35c

Address

E. S. HILDEMAN, Ashippen, Dodge Co., Wis.

Please mention this Journal if asked for the above advertisement. 2tdfb

FOR SALE.

As I intend to "go West" next February, I offer for sale my house and lot, and 50 stands of bees, all good Italians. Some of my queens were from A. I. Root, and some from J. A. Green, Dayton, Ill. I have more than I can take with me.

JAMES KINGHORN, SHEFFIELD, BUREAU CO., ILL.

BE SURE

To send a postal card for our illustrated catalogue of APIARIAN Before purchasing SUPPLIES elsewhere. It contains illustrations and descriptions of every thing new and desirable in an apiary.

AT THE LOWEST PRICES.

ITALIAN QUEENS AND BEES.

J. C. SAYLES,

1-12db Hartford, Washington Co., Wis.

Something New.

Hive with reversible section cases, also Simplicity Hives, the same as A. I. Root makes them, at Root's prices. Send for circular and price list to

1tdfb KENNEDY & LEAHY,
Box 11. Higginsville, Lafayette Co., Mo.

EARLY QUEENS. If you wish to buy Italian early, send for my new Price List. 4-5-6-7d.
W. S. CAUTHEN, Pleasant Hill, S. C.

20 HIVES OF HYBRID,

AND 55 HIVES OF BLACK BEES,

All in new Langstroth hives, will be ready for shipment by May 1st. Send for price list. Send all orders to
G. W. ALBRECHT,
3-8db Duane, Calumet Co., Wisconsin.

DADANT'S FOUNDATION FACTORY. WHOLESALE AND RETAIL. See advertisement in another column.

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Names of responsible parties will be inserted in any of the following departments, at a uniform price of 20 cents each insertion, or \$2.00 per year.

\$1.00 Queens.

Names inserted in this department the first time without charge. After, 20c each insertion, or \$2.00 per year.

Those whose names appear below agree to furnish Italian queens for \$1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen is reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delay as may be unavoidable.

Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with * use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for \$1.00 before July 1st, or after Nov. If wanted sooner, or later, see rates in price list.

GEORGE GRIMM, Of Jefferson, Wisconsin, Will Sell

300 TO 400

COLONIES OF BEES IN THE EIGHT-FRAME LANGSTROTH HIVE, AT THE FOLLOWING PRICES:

Pure Italians, 1 to 5 colonies, at	\$6.50
" " 5 to 20 "	6.00
" " 20 or more "	5.75
Hybrid Italians, 1 to 5 "	5.75
" " 5 to 20 "	5.25
" " 20 or more "	5.00

Terms and conditions as follows: Orders will be booked only when accompanied by the cash, and will be filled in their proper turn. I will ship some time in the month of May, and the exact date must be left to my discretion, to be governed by the circumstances and the weather. I will notify before shipment. Will guarantee safe arrival at last express station, and will guarantee satisfaction.

5-67-8d

SEND 30 CENTS

For 25 Gilt Bevel-edge Cards with name, latest styles, to
H. EDWIN ADAMS,
Mordentown, N. J.

QUEENS IN MARCH.

I will agree to send out untested queens in March, and continue to do so until October. Price, \$1.50 during March and April; after May 1st, \$1.00 each; after June 15, \$10.00 per dozen.

H. J. HANCOCK,

SILLOAM SPRINGS, BENTON CO., ARK.

UNTESTED QUEENS IN MARCH.

I should be pleased to get some orders for untested queens during March and after.

M. THROCKMORTON,

Houston, Harris Co., Texas.

Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they want to dispose of, we will insert notices free of charge, as below. We do this because there is hardly value enough to these queens to pay for buying them up and keeping them in stock; and yet it is often times quite an accommodation to those who can not afford higher priced ones.

I have 5 pure hybrids (Italian), and 8 pure black queens, to be removed about April 1. Hybrids, 60c, and blacks, 30c each, prepaid by mail, and safe delivery guaranteed.

5 A. L. SWINSON, Goldsboro, Wayne Co., N. C.

- *A. I. Root, Medina, Ohio.
- *H. H. Brown, Light Street, Columbia Co., Pa. 11f
- *Paul L. Viallon, Bayou Goula, La. 11fd
- *S. F. Newman, Norwalk, Huron Co., O. 11fd
- *Wm. Ballantine, Sazo, Musk. Co., O. 11fd
- *D. G. Edmiston, Adrian, Len. Co., Mich. 3fd
- *Dr. John M. Price, Tampa, Hillsboro Co., Fla. 5d
- *G. G. Wood, Birmingham, Jeff. Co., Ala. 11fd
- *Jos. Byrne, Baton Rouge, E. Baton R. Co., La. 55
- *W. W. Turner, Oak Hill, Garretts Co., N. Y. 75
- *S. C. Perry, Portland, Ionia Co., Mich. 3fd
- Will True, L. Caldwell, Clatsop Co., Oregon. 97
- Jas. O. Facey, Tay-stock, Ont., Can. 11fd
- *D. E. Jacobs, Longley, Wood Co., O. 1-2d
- *H. J. Hancock, Silloam Springs, Benton Co., Ark. 3fd
- *E. T. Lewis, Toledo, Lucas Co., O. 3-1
- *C. C. Vaughn, Columbia, Maury Co., Tenn. 3fd
- G. M. Doolittle, Borodino, Onondaga Co., N. Y. 3-13
- D. A. McLeod, Oxford, Butler Co., O. 5-15
- S. H. Hutchinson & Son, Claremont, Surry Co., Va. 5-5
- *E. Kretschmer, Coburg, Mont. Co., Iowa. 51fd
- *W. A. Compton, Lynnville, Giles Co., Tenn. 51fd

Hive Manufacturers.

Who agree to make such hives, and at the prices named, as those described on our circular.

- A. I. Root, Medina, Ohio.
- P. L. Viallon, Bayou Goula, Iberville Par., La. 11fd
- C. W. Costello, Waterboro, York Co., Me. 21-19
- Kennedy & Leahy, Higginsville, Lafayette Co., Mo. 3fd
- F. A. Snell, Milledgeville, Carroll Co., Ill. 1-13
- E. T. Lewis, Toledo, Lucas Co., Ohio. 3-1
- H. F. Mueller, cor. 5th st. and Western Ave., Day-cent, Ia. 3-1
- C. P. Bish, Petrolia, Butler Co., Pa. 3-13
- Milo S. West, Box 102, Flint, Genesee Co., Mich. 3-13
- F. M. Blanchard, Orwell, Ashtabula Co., O. 3fd
- E. Kretschmer, Coburg, Montgomery Co., Ia. 51fd

Situation Wanted.

Adin Stone, Vienna, Oneida Co., N. Y. 11fd

WANTED.—A situation with some bee-keeper on reasonable terms for this season.
A. L. MILLER, West Toledo, Ohio.

WANTED.—An experienced bee-keeper, having practical knowledge of queen-rearing, etc., with good references. State terms, etc.
5d Address P. L. VIALLO, Bayou Goula, La.

WANTED Wax to work into foundation by the pound, or for a share; also full colonies of bees for sale. For particulars address
4-5d B. CHASE, Earlville, Madison Co., N. Y.



Vol. XIII.

MARCH 1, 1885.

No. 5.

TERMS: \$1.00 PER ANNUM, IN ADVANCE; 2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00, 10 or more, 75 cts. each. Single Number, 5 cts. Additions to clubs may be made at club rates. Above are all to be sent TO ONE POSTOFFICE.

Established in 1873.

PUBLISHED SEMI-MONTHLY BY

A. I. ROOT, MEDINA, OHIO.

Clubs to different postoffices, NOT LESS than 90 cts. each. Sent postpaid, in the U. S. and Canada. To all other countries of the Universal Postal Union, 10c per year extra. To all countries NOT of the U. P. U., 42c per year extra.

NOTES FROM THE BANNER APIARY.

NO. 63.

THE HEDDON FIXTURES AND SYSTEM.

NOW that this subject is up for discussion we may as well stick to it until it is finished. You, friend Root, in your report of the Mich. State Convention, page 81, say that, while we were visiting the college apiary, you noticed that the crates and honey-boards, made upon the Heddon plan, were covered with bits of comb and propolis; but you neglect or forgot to state what *my* eyes instantly detected, and what Prof. Cook mentioned; viz., the cases were not properly constructed; the spaces between them were not the right size. Since I have been using the Heddon case and honey-board I have experimented some to determine what sized bee-space would give the best satisfaction, and I have found it to be 5-16. If this distance is increased very much, brace-combs are the result; if decreased, propolis is the penalty.

I am glad to see you admit, at last, that the Heddon hive-cover will not warp. Now in regard to the "twisting" feature, I have used 125 of the covers, and only two of them have caused any trouble by twisting; and, if one cares to take the trouble, this can be remedied by taking off the end cleats and using the remaining board for making a bottom-board. You say, "The cover has no place, but stays just where you lay it." I do not see that this is an objection; perhaps you did not mean it as such. It is just as easy to lay a simple flat board over a box, the upper edges of which are plain and flat, as it is to put in place a cover with a rim around it, the rim being beveled to fit the beveled edges of the box or hive; and so far as the staying

in place is concerned, the wind has yet to even displace the first cover of the Heddon style for me; what more can you ask?

In regard to taking out sections one at a time, versus a whole case at a time (see J. W. Porter's article, page 123), I would say that I should not take out sections one at a time as fast as finished, even if their places *could* be filled with empty sections, and no bulging result. When tiering up is practiced, the finished sections are always in the top case, and there is not that travel over them that there is in the lower cases, and they can remain until the whole case is finished, and not one of the combs show any stain. However, I do not always leave a case upon the hive until every section is finished. If there is a section in each corner unfinished, I do not usually wait for them to be finished, but take off the case, "whack" out the sections, crate the finished ones, and set the three or four unfinished ones into an empty case. When the case becomes filled with nearly finished sections it is put upon some hive. But to show how nearly I sometimes allow the sections to be finished before removing them, I will mention that, from the first 1000 lbs. removed last season (that sent to A. C. Kendel, and you will remember how he praised it, and pronounced it the best lot of the season), there was only *one* case of unfinished sections (28) to put back on the hives.

In raising honey I fail to see why, as Mr. Porter says, "We have frequent need to get into the brood-chamber;" and, honey-boards or no honey-boards, I see no use for a "flexible quilt."

The Wilkins sisters, unless I am mistaken, and I think I am not, do not allow the bees to have access to the outside of the sections; *i. e.*, they have the Doolittle system, as mentioned, and, with that sys-

tem, the sections are placed in wide frames, and the propolis is placed where the edges of the sections come in contact with each other and with the wide frames. I think that, in a majority of localities, bees do not propolize smooth surfaces unless they are nearly or quite in contact.

J. W. Harkness, page 128, admits that an 8-frame hive is preferable to a 10-frame one, but objects to a change, on the ground of cost. Bee-keeping is making rapid strides, and changes are necessary; but let no one change until he is satisfied that it is best for him to do so. I changed both hives and frames when I had 100 hives, and have been thankful ever since; but it does not follow that *everybody* must make the same change.

W. Z. HUTCHINSON, 68-34.

Rogersville, Genesee Co., Mich.

Thanks, friend H., for the additional light you throw on many points of the Heddon fixtures and system. As soon as you mentioned it I did remember that Prof. Cook made the remark that his cases were not made right, but it did not occur to me that this fault in the make was the cause of the propolis and bits of comb on the sections. You say none of your covers have been blown off; but perhaps there has nothing happened in your vicinity to "raise a breeze," since you adopted the Heddon system, friend H. The system itself seems to be raising something of a "breeze" just now, any way; but I hope nothing but good will be the result of the "blow."

HIVE-COVERS, ETC.

A "REVERSIBLE" COVER, AS WELL AS REVERSIBLE FRAMES.

NOW, Bro. Root, it is quite according to human nature that this odd-looking cover of mine should fail to suit you. You nowhere mention that it is *reversible*. I have used it for four or five years. The cut that did not show it, was a very old one. The cover I sent you was a cull, one in a hundred. I wrote so, I think, when I shipped. I was unexpectedly bought out faster than I could get them painted ahead. This style of cleating (see cut on page 121) not only serves to give us a strong well-stayed cover, but a reversible cover that always has a projection of $\frac{3}{4}$ inch *above*, so that when the shade-board is laid on, this ever-present space cuts off direct communication of heat. There is no system of shading that suits me as well as this adjustable shade-board. Now, if these covers should "wind," or twist, a chip laid on one of the high corners would touch the shade-board, and its weight would take the "wind" out of the cover at once. I think you will believe us, when we tell you that this warping or winding matter gives us no trouble at all. Now, I don't like the Simplicity style of cover, for I am greatly opposed to the use of any kind of a cloth for summer; and a telescoping cover, i. e., one that has any notches or ledges or rabbets to fit down into any thing, are not fit to cover up bees with. I have no objection to them for an outer or second cover, but I want but one cover to my hives, and then a shade-board to put on or take off, as the heat of the season indicates. I think this a grand style of cover; but as soon as it becomes popular, won't there be some one to come forward and claim that it is old?

THE SINK HONEY-BOARD.

The honey-board is objected to by J. W. Porter, on page 124. Bro. Porter all the time talks of the bungling, obstructive honey-boards of old. I want him to just try the sink skeleton board, an accurate cut of which appeared on page 121. If he does, I feel sure he will never discard it. Nearly every year, for three seasons past, the demand for these boards has so increased, and that, too, so much beyond my expectations, that I have found myself short, and had to rob my own apiary, and in this way I have had about half of my colonies with and half without the honey-boards. I have enjoined my students to keep close watch, and see if the boards were any detriment to the ready acceptance of the sections. Every time the word comes, "*Not at all.*" The question of the "bees readily entering the surplus department" now sounds like an echo of the more ignorant past. I would not use a system one moment that in the least retarded the bees from going to work in the surplus department, as soon as there was any outside condition to make such work *possible*. Just here, honey comes so fast from clover and basswood, that no removal of parts of cases or sections is practical. It is best to remove the surplus, by cases. Not all localities are like this one, perhaps. Honey-boards were discarded because they were not properly constructed. They are now again recommended, because they are now made in a practical manner. If Mr. Kretschmer invented my honey-board years ago, why did it die? Was it in practical shape? I never heard of it. In what place can I find a cut or description of it, that is also old? Was it a sink honey-board? that is, was there a bee-space in the honey-board itself? Won't this turn out like the Moore rack? Honorarily, the right belongs to the one who puts a device forward, thus benefiting the fraternity.

HOWES' REVERSIBLE FRAME, AND MORAL PATENTS.

Now, Bro. Howes thinks I am an infringer upon one principle in his reversible frame. Well, perhaps I am. If bee-keepers so decide I will step down and out, and my frame may lie dead till Bro. Howes and his adherents find out that my inventions in my frames put his principle in much better shape than he has it, when he can come and compromise with me; for in that case neither one could make my style of frame. It needs no patent, *so far as I am concerned*; no costs. I can abide by the decision of an unpaid as well as by a paid judge or jury. I advise Bro. Howes not to patent his device,

1. Because it is not worth a patent.
2. Some other device, patented or unpatented, will come up and kill his device, and the money he spent in patenting.

3. It will be shown that the hinge principle is older with another than with Mr. Howes.

Now, if my third statement prove correct, Mr. Howes would have no advantage from his patent. But should it prove incorrect, he will have the advantage of the moral sense of the honest men of our brotherhood, and I will do all I can to defend him in his right to that hinge, as he was the first to make it *public*, and *honorarily* it is his.

Now, brother bee-keepers, do I infringe? If so, say so, and I will abide by your decision. Bro. Howes shall be treated by me as I wish to be treated by him and all others. I tell you, I have little faith in trying to annul one's inventions by rooting up some old dead fixture that shows the

same principles, or part of them, in an impractical form. The question still wells up, Why did it die? For months or years it has lain a corpse, good for nothing, except to be dug up to cheat some one out of his honest earnings. The patent decisions are beginning to look at this matter also. Men that will stand up before the solemn duties of a court of justice, and swear falsely, are too numerous for safety.

JAMES HEDDON.

Dowagiac, Mich.

Now, friend H., why didn't you tell us that your cover was meant to be reversible? I looked at it and looked at it, and wondered what possessed you to get any thing up so awkward looking, without any point to it. But had you just hinted "reversible," then it would have been all clear. Then, again, that ingenious device for holding a shading-board; if you have ever spoken of that before, I had forgotten it. I supposed you put a great rock on these boards piled up on top of your hives, to keep the wind from blowing them off; and very likely great rocks are plentiful in Michigan, even if they are not here in Medina. Yes, sir, I agree with you that laying a chip on the upper corner, and laying on a shading-board, will take out the "wind." It seems to me, that, with the business you are doing, you ought not to use cuts that do not show things as they are; and besides, why not explain more in your own price list of articles what the things you use are intended for? In regard to friend Kretschmer's invention, it was described in his book, and to some extent in journals and price lists. As it would take me a good deal of time to hunt it up, I just turn the whole matter over to friend K., who, I suppose, can give you the points readily.

WHAT ONE OF OUR BEE-KEEPERS DID IN THE WAY OF RAISING POTATOES.

OVER 1600 LBS. OF POTATOES FROM ONE POUND,
IN ONE YEAR.

PERHAPS many of the friends have noticed reports going around, in regard to potatoes, and large yields secured by the prizes offered by a company who has a special fertilizer for sale. Noticing that one of the successful potato-growers lived in the neighboring town of Akron, I wrote to him, to inquire about it, and I was a good deal pleased to know that he is no other than one of our bee-men. Below is his letter, telling us how he did it:

A. I. Root:—Your favor of Jan. 25th came duly to hand, contents noted, and in reply would say:

On the 5th of April a pound of whole Dakota Red potatoes (not eyes alone) were cut and planted in earth under glass, with artificial heat. As the sprouts appeared above ground they were pulled off as you would sweet-potato sprouts, and potted. As the detached sprouts grew, cuttings were made and rooted, continuing the above process until as late in the season as I thought I could make cuttings and have them produce potatoes. They were then planted in what I would call a clayey loam, but so near the turning-point that some people call it a sandy loam, that had been thoroughly worked and

fertilized with a fertilizer purchased of the Bradley Fertilizer Co., Rochester, N. Y., and sown broadcast at the rate of 1000 lbs. per acre. That was the only fertilizer used. They were worked flat or level with a horse cultivator and hand hoe. With a potato that is good to yield, a good fertilizer, good soil, and a good deal of good care, one may expect good results.

CHAS. C. MILLER.

Akron, Ohio, Feb. 9, 1885.

The above potato, it seems, is attracting considerable attention just now. In response to whether friend M. had any potatoes for sale to plant this season, he sent us the advertisement you will find on another page. We extract the following description of the Dakota Red potato from Sibley's catalogue for 1885:

Dakota Red.—New; a large, very handsome, long, wedge-shaped potato; thrives well on both sand and clay soils. Western New-York Potato-Growers, who have tried it, say it is the best that ever grew. It tastes much like the good old *Peachblow*; does not shrink in cooking; is solid, mealy, and fine grained; the outside skin peels off in boiling, and leaves the inside intact, not crumbling to pieces; eyes irregular, some smooth, some deep, but few in number; skin firm, reddish flesh-colored; flesh white, of fine flavor; vine stocky, and keeps through drought by reason of the roots growing deep into the soil.

I have taken pains to find what the fertilizer above mentioned costs, and the 1000 lbs. delivered at his station probably cost him less than \$20.00. Now, I do not know how much time friend M. occupied in this work, nor do I know how much ground he used. The number of pounds of potatoes he raised was 1677 5-7. Probably the expenses were not more than \$25.00 out, besides his labor. His crop of potatoes, if sold at the prices advertised, will bring him something like \$75.00, in round numbers.

One reason for giving this was to show what a wide-awake, enterprising, industrious man or woman may do in the line of work mapped out in *Homes* in our last issue. The Bradley Company paid him a premium of \$75.00 for his feat. Now, friends, we can get similar results from bees, poultry, and a dozen other things (I was going to say a hundred, and I guess it would not be far out of the way) by putting brains and hard work into it. While I think of it, our friend Terry, the great potato-grower of the State of Ohio, is now engaged in writing me a book on potato culture, which we expect to be forthcoming in a few weeks. The price will be moderate, and we expect it to be up to the times in every thing pertaining to potatoes.

D. A. JONES'S FRAME AND HIVE.

SOMETHING ABOUT THE KIND OF HIVES THAT OUR
CANADIAN FRIENDS USE FOR GETTING THE
TREMENDOUS CROPS OF HONEY THEY RE-
PORT NOW AND THEN.

SOME time ago Ernest reminded me that I was doing wrong in making no mention in the A B C book, price list, and GLEANINGS, of the hives preferred by friend D. A. Jones and his large class of pupils throughout Canada and other territory. I accordingly wrote for a sample frame, which we will show by an engraving

soon. This frame is peculiar in being about 11½ inches wide by 14 deep, outside measure. The extreme length of top-bar is 13 inches, and is a heavy V-shaped comb-guide, made of one piece of wood. This comb-guide is really a three-cornered piece of wood about ½ inch on the side, and forms shoulders to which the end-bars are nailed. The distance from shoulder to shoulder is 10½ inches, so 10½ inches is the width of the frame inside. The end-bars are ½ inch thick, and exactly 14 inches long. The bottom-bar is exactly 12 inches long, and has projecting points, which are almost a necessity for a frame so deep. These points strike the sides of the hive when putting a frame in place, preventing bees from being crushed. This bottom-bar is set edge-wise, and is very light, being only ½ inch by a little less than ½. Below is what friend Jones says in regard to it. Now, the following letter was not intended for publication; but it is so rare that we get any thing from friend Jones I am sure he will excuse me.

Friend Root:—Please accept our thanks for your kind offer, which is duly appreciated. I will have a frame built to size sent you. In marked catalogue which we forward you, you will find inside measurements of frame. There are now a great many thousand of these hives in use throughout Canada; in fact, I believe more of them than all others put together. There are hundreds manufacturing them besides myself. Out of orders received last year for 37 different sizes, 95 per cent of the whole amount sold was our size. We have no axes to grind in the frame or hive business, and would as soon make one kind as another, and adopt, could I secure better results; but after a trial of 14 years by the side of the shallow frames, the results were so much better that I could no longer resist the temptation of using them exclusively. When Mr. Langstroth visited me, accompanied by Judge Andrews, it would have done you good to see how readily father Langstroth could handle my frame, and he was so delighted with them that he asked me to construct him some hives that he might give them a trial; but they were never shipped him, on account of his sickness soon after.

You will observe that the bottom-bar projecting prevents the frame from touching the side of the hive in manipulation. This allows of greater rapidity in handling. One frame is laid on side or stood on end; no bees can be mashed, as the projections keep the frame bee-space above board.

If you do not issue your new book before the first or middle of April, I can give you some new improvements to put in it, in connection with bee culture—things of very great importance in wintering bees, the production of comb honey, improvement in sections, and a number of other valuable things which would perhaps add a little to its interest.

Some years ago I thought of making metal corners, and made a great number of devices, some of which I believe are not equaled yet. Although I did not take to the metal corners favorably, yet since reversible frames are receiving some attention, I believe that some of the simpler ones would be hard to beat. If you send us one of your latest improved, and should it not be superior to mine, I will then forward you a sample for your inspection, to manufacture, of course, should you desire to do so, and no hundred-dollar charge either.

Becton, Ont., Feb. 16, 1885.

D. A. JONES.

We send you a sample of our latest reversible frame, friend J., and I should be extremely happy to have suggestions from you before our next edition of the A B C goes to press. And by the way, friend J., we shall feel a little more free to trespass on your kind liberality if you would take some pay, in some shape or other, for the benefits you are continually conferring upon us.

FERTILIZING QUEENS.

PROF. COOK DISCUSSES THE PROBABILITIES OF A QUEEN BEING FERTILIZED BEFORE SHE EMERGES FROM THE CELL.

DEAR MR. EDITOR:—You ask my opinion about fertilization of queens after reading Mr. F. Cheshire's article in the *British Bee Journal*. I reply, that it is not at all changed. I have discussed this subject in a paper sent to New Orleans, to be read at the International Congress; but as I had not then seen the article in question, I will add a few words. Mr. Cheshire remarks truly, that the sperm-cells are quite mature before the drone-bee assumes the imago stage. If any one examine critically the reproductive or generative organs of the mature drone he will find that the testicles, or *testes*, are much smaller than they are in the pupa, or nymph. The reason for this is, that the sperm-cells have wandered, or migrated, having passed through the generative duct to the seminal sack, the *Vesiculæ seminales*. In this migration, mucous is added, and the cells are bunched, or massed, preparatory to coition. Thus massed they are passed down into the external organ, which, by a sort of turning wrong side out in copulation, deposits them in the oviduct of the queen, which clasps and forces them into the spermatheca.

Mr. Cheshire says that the sperm-cells are already active in the larva. He does not say whether in the mature or in the partially developed larva. I did not suppose they were active at all in the larva, but have found them so in the pupa. If they are active in the larva it must be when the latter is fully matured. That they are so at all, seems strange and exceptional. If they are active there can be little question but they are functionally perfect. The activity of the spermatozoa in all animals seems to be the test of vitality.

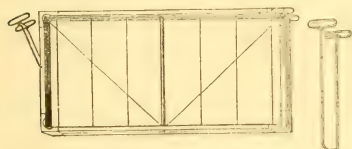
In the impregnation of the queen, millions of these sperm-cells are to be passed up the oviduct, and passed into the spermatheca. For this to be accomplished, the cells must be massed and forced, under the orgasm of the queen, along the oviduct, into the spermatheca. It is possible—hardly probable—that a few of these might wander along the channel, and find this destination in the case suggested, were the sperm-cells free, and the queen developed and ready for impregnation. All animals, insects included, have an age of so-called puberty, before which sexual instinct is absent, and impregnation impossible. I know in insects this is often early. I have seen butterflies in copulo soon after the female had emerged from the chrysalis, that her wings had not got dried. We know, however, that the queen leaves the cell days before the orgasm appears. To suppose, then, that putting an immature—in fact, a larval insect—into a cell where a queen is yet inchoate, and to suppose impregnation to occur, is, it appears to me, expecting more,

much more, than the law of probabilities will warrant. As Mr. Cheshire suggests, it is a field where we may experiment. Indeed, I have experimented, and with no sign of success. Had I seemed to meet success, I should have tried over and over again, for other explanation would have offered till all possible opportunity was destroyed. A. J. COOK.
Agricultural College, Mich.

REVERSIBLE FRAMES.

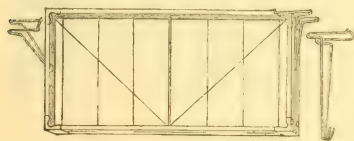
JUST WHERE THE MATTER STANDS NOW.

THE number of models received by mail is still almost as great as at our last issue. A great many of them are exactly what we picture below—the device described in our issue for Feb. 1, page 105. Well, after we had made about a hundred or so of these I did not feel satisfied with them; they did not stay up in place as I wanted them, and propolis would be apt to force the wires out of the wood where they go into the perforations of the end-bars.



FRAME-REVERSING DEVICE AS WE HAD IT ABOUT FEBRUARY FIRST.

While studying on this problem, meanwhile considering all devices that came in, I got a hint from one made of sheet iron, coming from friend C. H. Deane, Mortonville, Ky. Friend Deane uses a strip of heavy sheet iron, much like the Howes idea, only it was bent out so as to form a supporting arm in the shape of a loop made of the iron. The top piece of the loop extended over the top-bar of the frame perhaps half an inch; and when in place it rested on the top-bar with considerable pressure. This pressure kept it in place; and if the frames were not exactly accurate in their dimensions, there was spring enough to it so that it would adjust itself. The sheet-iron arm, however, I consider objectionable, because it will mash bees, or cut them in two where it rests on the metal rabbet, unless you use great care in handling. The wire loops shown in the cut above, I consider greatly preferable, and in the cut below you will see I have combined both.



ROOT'S FRAME-REVERSING DEVICE.

We put our frames together as you will notice, using bottom corners all around. But the same arrangement will work equally well on a nailed frame made without pro-

jecting arms to top-bars. I prefer the bottom corners, not only because they brace and strengthen the frame, but because, being made by machinery, they are absolutely alike, and always alike, no matter whether you bought them ten years ago or to-day. The reversing devices are also always alike, and can therefore be made so that they will come over the metal corner with a snap, the spring of the wire making it a pretty secure fixture. With the thumb-nail, however, the part that springs over the top-bar can be snapped off from the metal corner, then it swings over like the Howes device. Instead of being obliged to use a screw at the pivot where it turns, both wires are put through a quarter-inch hole, then turned over and clinched with a hammer. When put on just right, the points of the wires should describe a circle in the end-bar of the frame; that is, they press against the wood so as to make this circular scratch as they turn around, and the whole fixture is thus held closely and securely tight against the end-bar. The corner also possesses much greater strength than our old-style top corners, and the wires are so smooth that there is no danger of cutting the fingers. We have been shipping them several days, and are prepared now to fill all orders at the following prices:

Reversible frames in the flat, \$5.00 per 100, or \$15.00 per 1000; same already put up, \$1.00 per 100 extra. If they are ordered without hives in which to ship them, 25 cents per 100 extra, or fraction thereof, must be included for crating. Prices without wiring, and without the wood being pierced for wires, \$4.00 per 100, or \$35.00 per 1000, in the flat. A sample frame by mail will be 15 cts.; pair of wires by mail, 4 cts.; reversing corners, per 100, \$1.00; per 1000, \$7.50.

In making this corner I have infringed on the ideas of friends Howes and Deane; no others that I know of, although great numbers of devices made of wire have been sent in. I have written to friend Howes to know what I shall pay him for the privilege of using the pivot arrangement, providing he is the first inventor of said arrangement. I have also asked friend Deane to say how much I owe him for the idea he furnished, providing I continue using it. It is by no means certain that this is the best device that will be brought forth, but it pleases me the best of any thing I have seen or heard of.

BEE-KEEPERS' CONGRESS AT NEW ORLEANS.

NOTES BY THE WAY.

WE are just waiting for the train. I explained to Huber as well as I could that papa was going away off on the cars, for a good many days. He laughed, and began to jump up and down, as he does over any piece of intelligence that papa gives him; but when papa kissed them good-by all around, finishing up with his babyship, his little lips drew up, and he couldn't keep back the tears, and papa couldn't either. Oh dear! I do not want to go away from home at all. I love

my home, the factory, the greenhouse, the carp pond, and all the things.

ON THE WING.

It is 10 o'clock, and we are flying over the frozen landscape. The morning sun pours down a flood of light. You remember how I told you I had been thanking God lately for the sunshine. As the fields and towns fly past us, this wealth of sunshine comes out as it never did before. Of course, it does not even thaw the snow where we are now; for where we are it is still below zero. My heart bounds at the thought that at the rate we are speeding southward this beautiful panorama will soon change to one of spring time and verdure. Of course, the creeks and rivers we pass are all solid, and many of them form beautiful pathways for children, and for cattle and other farm stock; and, by the way, I notice cattle hunting low places, and pawing in vain for water. Is that the case with any of your stock, my friends? Remember our dumb friends. The sleighing is beautiful, and the hard level surface which the roads present is very pleasing. It is seldom that this portion of Ohio has enjoyed such sleighing as it has had for five or six weeks past.

2 o'clock P. M.—The snow is beginning to disappear, and the streams are uncovered. The sight of the babbling brooks is refreshing, after the scenery has been so long all ice-bound. I am enjoying my ride amazingly; and as my mind has been free from business cares, I have just studied out a great invention—or, rather, it came of itself. I will tell you about it some day. We are in the neighborhood of Springfield, Ohio.

REPORTS DISCOURAGING.

OUR bees are all dead—died with cholera. We noticed before cold weather set in that one hive had it, and we carried it away from the others. We had four hives; have the hives yet, for that matter. We were going to have at least four swarms, then I was going to send for the rest of your A B C book (I have the first part), and for GLEANINGS; but that is all gone. I write to ask you if you will please tell me what I can do with the honey and comb and hives. They smell very offensive. Will the hives give it to other bees? We feel worse about our bees, because our neighbor's bees that received no care are doing well. They said they did not care whether they lived or not. Could we have caused the bees to get the disease in our working with them? We wanted to learn about them.

AGNES HUDDLESON.

Victor, Iowa, Feb. 17, 1885.

I am afraid, my friend, you have packed your bees too close, and this would be the reason why the bees are all right that had no care. Shut up your hives so no robber-bees can get in, and in May or June give these offensive combs, one at a time, to strong colonies, and they will fix them in no time. When opportunity offers, it would be a good plan to brush out the dead bees, and brush off the combs as well as you can conveniently. Put the dead bees on your compost heap, and they will probably be worth something. The worse they smell the more

they will be worth for manure. I would not give up at one defeat, if I were you. If your neighbor's bees lived without *any care* it is pretty certain that your method of management has been at fault in some respect.

CAN'T KEEP BEES WHERE IT IS 30 BELOW ZERO.

I can't keep bees through winter in this locality, where the thermometer is 30° below zero. I started in winter with 36 colonies; lost 26; 10 alive now. There are now 250 full frames of combs. I am at a loss to know what to do with all of those empty hives and combs before the hot season sets in. I want you to advise some plan for me to get bees in them early in the season. The most of my bees died with plenty of honey in the hive.

W. RIGGEN.

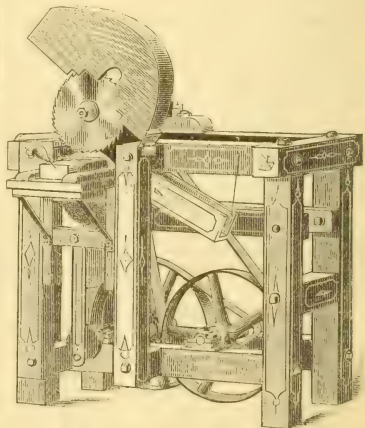
North Salem, Ind., Feb. 7, 1885.

Friend R., if you have the low temperature you mention, continuously for several weeks, I would try wintering the bees in a cellar. You know this is quite extensively done now in many localities.

OUR FOUR-PIECE-SECTION MACHINE.

SOMETHING FURTHER IN REGARD TO IT.

BELOW we give to our readers an engraving of the four-piece-section machine we spoke of in GLEANINGS of Jan. 15. It works with perfect satisfaction, turning out as smooth and nice a section as you will find in the market. Owing to the improvements we have recently made on this machine, we can not afford it for less than \$35, instead of \$40, as stated in our former issue. We can fill orders on short notice just now, as we are still not badly crowded. Remember this machine saws and sandpapers the sections all at one movement, and does not require skilled help to run it.



OUR NEW MACHINE FOR MAKING THE FOUR-PIECE DOVETAILED SECTION.

This is by all means the cheapest rig a supply-dealer can use for making section boxes, for it does away with the necessity of an expensive cigar-box planer.

A HOME-MADE BUZZ-SAW FOR MAKING HIVES.

THE WAY FRIEND HESELTON MADE ONE, TO BE TURNED BY HIS TWO BOYS.

I HAVE been a bee-keeper for twenty-five years, but it has been only about ten years since I commenced with a frame hive. Since that I have taken a great deal more interest in the bee business, yet I have not made much of a success of it, as I have had a farm to attend to, and that has taken most of my time; but I shall never give it up while I live, for I love the "little busy bee."

After I commenced reading GLEANINGS I found there was a better way to make hives and frames than with a hand-saw; but to buy a Barnes foot-power would cost me more money than I could spare; so I set about building one. In the first place, I went to the blacksmith shop and procured a piece of inch round iron, 20 inches long. I filed the ends square, and obtained the centers. I then filed down the journals, and the end where the thread was to be cut, and I did all the filing with one Nicholson ten-inch file. I then put a small pulley on the shaft, and hung it on its centers, in a little frame made by nailing some two-inch strips across some other strips of the same kind. I filed some screws to a point, for the centers to run on, and clamped the frame to an old sewing-machine table. I then took two eight-inch flat files that had been worn out, and ground them into right and left chisels, to turn my journals true, which I accomplished at odd spells. I then took the shaft to the shop, had a collar shrunk on for the saw to rest against, a thread cut, and a nut put on to hold the saw. He also made a loose collar for the nut to work against. For the iron and work he charged me one dollar. I then took it home and put it into my lathe, and did what turning was then needed. Where the saw went on I had to turn down to $\frac{3}{4}$ of an inch, as it would not make a plump inch, when it was made round.

I then built a table, about 4 feet long and 3 feet wide on top. The top is a frame, and hangs on hinges at the back end, so that it can be raised and lowered at pleasure. The right half of the table runs on slides like the Barnes, but the slides are inch ash. I raise the table by placing blocks under it, of the required thickness. I then built a driving-wheel 4 feet in diameter, by nailing three thicknesses of inch lumber together, cut out like fellows to a wagon-wheel. The spokes are also inch lumber, and six in number. The hub is made of some heavy tough lumber, cut into wheels about a foot in diameter, and securely nailed to the spokes, and two of these wheels on each side. I then planed up a tough hickory shaft two inches square, turned down the journals to about $1\frac{1}{2}$ inches, put a crank on each end, hung the wheel so that it would run true, and put on my belt, which a saw-mill man gave me. It was an old piece of 4 ply belt. I cut off a strip 3 inches wide, and pulled it in two, and it works all right. The saws are 8 inches in diameter, which you ordered for me from Fitchburg, Mass. The shaft runs in wooden boxes, babbitted, and now with one of my boys at each crank I can cut up inch lumber rapidly and nicely. In $\frac{1}{2}$ -inch lumber it sings like a top.

I want to build me a wooden turning-lathe. If there are any of the readers of GLEANINGS that

have had any experience in that line of work, I should be glad to hear from them through that medium.

G. H. HESELTON.

Valley, Lewis Co., Ky., Feb. 9, 1885.

Such a machine as you describe, friend H., will do a large amount of work, without doubt; but it strikes me you ought to have a pretty good family of boys, if you expect to drive much of a business. While two are turning, there ought to be about two more having a good rest, so as to take their place presently. As your business increases, very likely the boys will begin to plead for a little steam-engine; and if they will put in and help their pa, there will not be any trouble in paying for it. Your large wheel should, by good rights, be entirely below your buzz-saw table, so your belt will not ever be in the way in cutting off long boards. You can either put the boys down a little lower than the floor, or else elevate yourself and the saw-table a little higher than the floor. Thanks for your description of the way you did the work yourself, so as to save expense.

MY REPORT.

CAN HONEY EVER SUCCESSFULLY COMPETE WITH SUGAR, AS A HOUSEHOLD SWEET?

I COMMENCED the season with 10 colonies of my own, all in good condition, and 8 colonies on shares which were in fair condition. The early part of the season promised exceedingly well, and my bees never gathered as much from apple-bloom before. They filled up the spare room in the brood-chamber, besides storing a considerable surplus, and becoming strong in working force, and in unusually good trim for a successful summer's business.

However, white clover did not yield much honey; and basswood, of which we have but little at best, yielded next to nothing. Buckwheat did well for as dry a season as we had, so did Spanish needles; but the yield from those sources is not large in this section. Taken all together, the past season was considerably below an average one. I produced all comb honey. My own colonies averaged me 36 1-5 lbs., spring count, with 80 per cent increase, and those I ran on shares averaged 29 $\frac{1}{2}$ lbs. and 100 per cent increase. I sold all my honey near home, at from 16 to 25 cents per pound, the first being wholesale and the latter retail prices.

I found the market at times almost glutted with honey, and it was dull work to make sales at such times. I have produced honey for more than 20 years, and have sold at prices ranging from 15 up to 40 cents a pound for comb honey, and am at present strongly of the opinion there can be an overproduction of honey, and that we are not far from it now. While many think that honey should be as commonly used, as a sweet, as sugar now is, it must be recollected that it is generally considered more of a luxury than any thing else at present, and I doubt if we can ever produce it cheap enough to get it out of that position, and live.

EMBARKING ONE'S ALL IN THE HONEY BUSINESS.

I have always been too much of a doubting Thomas to make the bee business a specialty, and "risk all in one ship," and am therefore engaged in fruit culture in connection with bee culture, and find it pleasant and agreeable as well as profitable.

I now have 9 acres in orchards, 3 acres in raspberries, and $\frac{1}{2}$ acre in strawberries, and intend to plant between 3 and 4 acres more to raspberries and strawberries next spring. At some future time I will try to give you some further reports as to my success in the undertaking. SAMUEL RAY.

Columbiana, Ohio, Feb. 13, 1885.

Friend R., I am afraid you are doubting a little too much, are you not? It is my impression that there are many who prefer to raise honey instead of doing something else, even if the price should come down so as to average not more than the price of white sugar, as it is now retailed in our markets. Of course, there are many who have other work that would pay them better; but those who love the bees and the business, I think would still save the honey when it comes, and I am not sure but it will eventually prove to be the cheapest sweet, all things considered, that can be obtained.

HEDDON'S HONEY-RACK COMPARED WITH J. P. MOORE'S.

ALSO SOMETHING IN REGARD TO MORAL PATENTS.

FRIEND ROOT:—The honey-rack described on page 85 of GLEANINGS is not like Heddon's. 1st, because it does not make any arrangements for bee-spaces at top and bottom of the sections; 2d, It is an inside case; i. e., it needs another outside of it, for we infer the case is to hold only the bottom of the sections, for no sensible bee-keeper would think of using sections 6 $\frac{1}{2}$ in. long and only 2 $\frac{3}{4}$ in. high. The Heddon case covers the sides of sections entirely; 3d, There is no arrangement for tiering up in the Moore case. I have used a case essentially the same, and do not like it. But the Heddon case I have yet to find any fault with, and any claimed improvement on it has been, as Mr. Heddon says, only adding a defect. As I do not remember to have seen any thing in print giving its points of merit, I herewith inclose an article on that subject.

I will say, in regard to the "moral-patent" business, I wrote Mr. Heddon, as friend Hutchinson suggested, and received a very neat and gentlemanly reply from Mr. Heddon, which was quite satisfactory, as far as I am concerned; and yet I am not satisfied that "moral patents" are just right, or that bee-men are more apt to respect the rights of others than any other class of men. The paying for a right to manufacture should also include the defense of that right. Suppose that now, after you have paid Mr. H. \$100 for your right, some other large establishment, with a less conscientious man at the head, advertises and makes them for almost half what you do, do you think that he would not get the custom? Would bee-men be willing to pay more for a thing of your make than for another made equally well? Would the blame rest on the bee-man if he did buy of him, the cheap manufacturer? Would he be justified in taking the money from his family, to pay you the extra price? Now, this is a supposed case; but it is also true in fact, as the inclosed leaf from a well-known manufacturer's catalogue will show.

Allow me to criticize Heddon's article in one point. It might be inferred from the paragraph on the honey-board, that bees would not build comb

between it and the tops of the frames, which is wrong, for they will do so. I have never used one myself, but a neighbor has, so I know from personal observation. Also the engraving of his hive is wrong in one particular. It would appear from it that the slat honey-board had strips running cross-wise with the frames, which is not a fact.

WIDE FRAMES VS. HEDDON'S CASE.

1. It dispenses with separators, saving expense, and making one less "trap" to have around.

2. It keeps sections free from propolis, by having proper bee-spaces above and below the sections, and covering the sides entirely; at least, this has been my experience, and I infer that others have had the same, from the "boom" they got at the Michigan convention.

3. The sections are brought down closer to the brood-frames when putting on the first sections at the commencement of the honey-flow; i. e., to get the bees at work in sections you do not have to put them so high up, and away from the heat of the brood-nest, which is important in preserving the heat of the hive. It is true, one might, by putting wide frames at the side, or by division-boards, obviate this objection to wide frames, but this makes more "putter" and more "traps" around. I find that, in practice, one case of 28 sections is seldom too much for a colony to start on.

4. It admits of tiering up, without putting on more room than the bees can heat up to the proper temperature for wax-working. The sections which are nearest finished, and which ought to be ripened fastest, are always kept at the top, where the greatest heat is supposed to be.

5. Cheapness. A hive complete with two wide frames is put at \$3.50, which is to hold 48 sections; one hive, complete with two cases, or 56 sections, at \$3.00—a difference of 50 cts. in favor of cases, and room for 16 sections more. This would make, I presume, a difference of \$60.00 on furnishing an outfit for 100 colonies—quite an item!

6. Ease of handling. In filling wide frames I have had trouble in handling the frames when full of empty sections; they would slip out on the side where there was no separator, or would get moved a little, just enough to bother, or the bottom-bar would get sagged, and leave a space in the middle at the top, and thus throw the sections out of square by their own weight, when they were being filled. A section can not get out of place in a Heddon case; it can't drop out, nor get in the way of another. Sections are easier put in and easier taken out of a case. There is no prying up of frames, no gluing together of frames. The sections will usually drop out themselves when the case is turned bottom up, and can thus be emptied while you would be getting wide frames out of a hive. They are easier to handle when full than a hive full of wide frames, for your load is in two parts; this is quite an item when, for any reason, you wish to get at the brood-combs.

7. They may be reversed, which is quite important in getting sections sealed over quickly.

There are some minor points I might mention, but think these are enough to convince the most skeptical; but if there yet be any doubting Thomases, I say, let them send to Mr. Heddon and get enough to try, and be convinced. But before closing I would remind any one who thinks of dispensing with separators that three things are all important. 1. Sections must not be over 1 $\frac{1}{4}$ in. wide, but

may be narrower; 2. Full-sized starters of foundation are necessary; 3. The hive must stand so the sections will stand plumb sidewise; *i. e.*, not lean so the foundation will not hang just in the center of the section.

C. A. HATCH.

Ithaca, Wis.

I know of the difficulties, friend H., in the way of the moral-patent business, and I do not wish to be understood that I mean to advocate moral patents in place of our patent-laws. It is too large a subject for me to even attempt to handle. I can do this, however, and like to do it: Whenever I want to use some important idea advanced by somebody else, I like the idea of paying him for it, or for his consent to my using and advertising it, if you choose. I hope the brother who sends out the catalogue of which you inclose a leaf will change his next issue, or else make some arrangement with friend Heddon to let it remain as it is; that is, if he continues to advertise "*Heddon's Hive*" he should first purchase the right to use Heddon's name as an advertisement for that class of hives.

ALSIKE CLOVER AS A FORAGE AND HONEY-PLANT.

A PAPER READ AT THE CONVENTION AT VASSAR, MICHIGAN.

HAVING made some experiments with this clover that proved very satisfactory to myself, I thought to give the result of those experiments to this convention, hoping that it will be of some interest to bee-keepers, and to farmers in general. I will first give a description of the plant and its growth.

ALSIKE, OR SWEDISH CLOVER—*TRIFOLIUM HYBRIDUM*.

So called from being intermediate in its appearance between the red and white clover, possessing qualities common to both. It makes but little growth the first year, seldom blossoming in our latitude. But the second year it comes on as fast as red clover, sending up from 3 to 5 seed-stalks in a stool, which throw out numerous side branches, making a succession of bloom for about four weeks. The root is unlike our common red clover, from the fact that it has but a small center, or tap root, and throws out numerous side-roots, which makes it well adapted to low land, or any land that is liable to heave. The stalk is little if any larger than our common timothy grass, growing from one to two feet in height, being well covered with fine leaves, having blossoms similar to our common white clover, but about one-third larger, bright pink in color, fading to white. The seed is about the size of a timothy seed, with the hull off, growing with from 3 to 5 seeds in a pod, the same as white clover. One peculiarity of this clover is, that it makes but little second growth if the seed-stalk is allowed to form; consequently the first crop has to be saved for seed, being similar in this respect to mammoth or peavine clover.

I consider it fully as good for hay as timothy, being fully as free from dust when cured. Having been well satisfied of its value for a hay crop for some ten years, I decided, in the spring of 1883, to seed three acres of land with clear alsike, and make an experiment as to its value for pasture, honey,

and seed. The piece I decided to seed was 12 by 43 rods, crossing what was once a black-ash and elm swail, now well underdrained. About two-thirds of the ground was low; soil a black sandy loam, the high ground hard clay, the whole ground being in fall wheat when I sowed the seed in April, 1883. I sowed 4 lbs. to the acre, and in October following I top dressed the high ground with well-rotted manure, putting on 14 two-horse wagon-loads. In April, 1884, the clover came on very rapidly, so that by May 1st I turned 5 cows and 3 hogs into the field. May 24 I put 2 horses in the field, and the last five days prior to shutting all stock out of the field, which I did June 15th, I allowed 40 sheep on the ground. As a forage plant I will speak hereafter.

PASTURING ALSIKE SO AS TO MAKE IT BLOSSOM IN AUGUST.

Knowing its peculiarity of not growing a second crop if the seed-stalk was allowed to form, I pastured it close. I know it has been stated, that if it was cut in June, just as it was coming into blossom, that it would blossom again in August. This is a mistake. In our latitude the seed-stalk must not be allowed to form. My object was to have it come in blossom about July 20. In this I failed. It commenced to blossom July 8th, when it was about 4 inches high; and by the 15th, 40 rods away, it looked like a field of snow, and the aroma of the blossoms could be smelled very plainly that distance. The bees commenced to work on it with the first blossoms, and continued to work until Aug. 1, for two weeks of the time with a perfect roar.

My failure to have it come in blossom at the close of basswood bloom, as the season turned out was just what I wanted, for basswood failed to furnish any honey; and had it not been for this I should have had no white honey to speak of. The last of August the seed crop was ready to cut, having attained a height of about one foot. I secured the crop by cutting and curing, the same as though it were hay. I thrashed it in November, and got 540 $\frac{1}{2}$ lbs. of seed, cleaned ready for market.

AS A FORAGE-PLANT.

It has no superior, producing a large flow of very rich milk. June 15th, when I shut the stock out of the alsike, I allowed them to run in a field of red clover that was just coming into blossom, and at the end of the third day the five cows had shrunk their milk to the amount of 9 quarts to the milking. Again, in October, to test it further for feed, as there was quite a growth of leaves on the ground I again allowed the cows in the field. You may judge of my surprise when I found, at the end of a week, they had made a gain of 10 quarts to the milking.

I had, July 1st, 20 swarms of bees that I was working for comb honey, and from the alsike blossom I obtained 20 lbs. per colony of very nice white honey in one and two pound sections. As a result I have sold quite an amount of seed to my neighbors, and I shall sow five acres to clear alsike, and about one pound to the acre on ten acres, with other seed, this coming spring.

I would recommend all bee-keepers to get it introduced in their vicinity as a paying crop for the farmer, and a never-failing source of honey for themselves.

The seed is the cheapest now I ever have known it to be. A. I. Root, of Medina, Ohio, is selling it for 20 cts. a pound, or \$10.00 a bushel, so that, by sowing four pounds to the acre, which is a great plenty, the cost will be but 80 cts.

This coming season I shall pasture the piece I have in about 12 days later, so that, if it matures the same as it did this year, it will come into blossom about July 25.

M. D. YORK.

Millington, Mich.

HOW TO MAKE A CHEAP HEN'S-NEST.

AFTER my remarks in the former number, in regard to a hen's-nest, I happened to find, in an old *American Agriculturist*, something like the cut below. A common flour or sugar barrel is all that is needed.

You can buy one at the grocery for about ten cents, usually. Saw a hole in it like the illustration, only our artist has got it upside down. The V-shaped cut should be uppermost, then when biddy starts to step out she won't be interrupted in the midst of her cackle by slipping up. Nail securely to the hoops the staves that are cut, then the barrel will not be coming to pieces, even if we have dry weather. The material for the nest may be ground moss, straw, or any thing you choose; and if, in the course of time, the institution should become a harbor for vermin, it won't cost very much to saturate every part of it with kerosene. The opening can be easily turned toward the wall, so that the inmate can enjoy the proper amount of retirement from the busy, gossiping flock, while she deposits her snow-white or buff-brown egg, as the case may be.



TEN-CENT HEN'S NEST.

SWEET, OR BOKHARA CLOVER.

SOMETHING ABOUT SOWING IT ON BLEAK HILLSIDES, WHERE NOTHING ELSE WILL GROW.

AS it is about the time of year when bee-keepers begin to ask the question, "Shall we sow any thing to keep our bees busy and out of mischief after the natural pasture is gone?"

I should like to give a little of my experience with sweet clover. It has generally been classed among the weeds, and not as a forage plant; but this is not strictly true, as stock of any kind will feed on it very readily in the *early spring*, or during any dry season when better pasture is scarce; and besides that it is a great fertilizer, as the roots will penetrate 4 or 5 feet into the hardest clay soil, and will leave the soil very mellow, and in good condition for another crop. It is a perennial, bearing seed the second year when the roots all die.

If you wish to seed a piece permanently, it is better to sow seed two years in succession. On our river place we had a barren hillside, too steep to plow, that had always been utterly destitute of any kind of vegetation. I had tried in vain to seed it to white and red clover, and other kinds of grass. Five years ago I sowed it to sweet clover, and ever since it has produced a splendid crop of honey every year, from July till frost killed it. The sweet clover has so mellowed the ground that it is now well seeded to white clover, which will, in a year or two more, entirely swamp out the sweet clover.

Any bee-keeper who has too poor a piece of ground to raise any paying crop will find that a crop of sweet clover will pay well in honey, besides having a crop second to nothing to plow under in the fall for wheat or rye. You need not fear it as a weed, as its profit greatly outweighs any little trouble you may have in that direction. I regard weeds as the poor farmer's best friend, as they compel him to cultivate his crops, and will fertilize his land when he lets it lie idle.

If you wish to plow it under, sow it pretty thickly (as the stalks and roots will not be so large). Sow from a peck to $\frac{1}{2}$ bushel per acre; 4 or 5 lbs. will seed an acre for a honey crop.

Medina, O., Feb. 14, 1885.

H. B. HARRINGTON.

In connection with the above I would remark, that we have a fine stock of seed that we can furnish for 20 cts. per lb.; 10 lbs., \$1.80, or 100 lbs. for \$15.00. By mail, 18 cts. extra per lb. for bag and postage. If you have any piece of ground so hard and barren that nothing else will grow, try the plan given by Neighbor H. I have for almost twenty years noticed the hillside he speaks of, and wondered why there was not something that could be made to grow on it. There is no more need of its being a troublesome weed than common red clover, if we plow it under, on the plan suggested, when you want to get rid of it.

J. F. FLORY'S SECTION-CLAMP.

As Described on Page 100.

FRIEND FLORY TELLS US ABOUT IT HIMSELF THIS TIME.

I WANT to call your attention to one thing, and that is, those corner clamps that Mr. Geo. Hobler, our secretary, sent you a few days ago. I have been using the wide frames with sections, more or less for nearly ten years; but the greatest objection I ever had to them was it took too much time to handle the honey, especially here in California, where honey is cheap and labor high. I finally offered \$5.00 for some kind of clamp, or contrivance, that we could clamp them all together with, and handle them like a solid box, like what we here call the "Tulare sectional case," in which shape nearly all our comb honey is put up, and is cheaper and better than the Harbison section.

I thought of those corner clamps, perhaps a hundred times; but there always seemed to be some objection to them, for some cause that I can not now explain. But I finally rigged up the Barnes sawtable and sawed out a few, and put them on one of our sectional cases, when I saw in an instant that I had it, and exclaimed, "There, now, I've got it, sure," and started for the house to show it to my better half, who was also delighted with it. You see, friend Root, we are partners in bees and every thing else, as well as the babies, which are only 6, the eldest 12 years old, and the youngest 11. So I fixed up a lot of sectional cases, intending to take them to our quarterly bee convention at Hanford, in Dec., 1884, but being quite unwell I did not get to go; but at a special meeting in Fresno, Jan. 7, I presented them, and every one was enthusiastic in their praise, and there is not a comb-honey producer that belongs to the Central California Bee-keepers' Association that saw it, and some that don't, but say they intend to use them. Their use will ne-

cessitate a honey-board; but, unlike the Heddon case, only one. By sawing them $\frac{1}{8}$ of an inch plump, we have the proper space, between each section case, which facilitates their handling, without killing bees, and it seems to me much better than two spaces and a honey-board besides, like Mr. Heddon's.

There is one thing the bee-men here are satisfied with, and that is, it is going to revolutionize the manner of putting up comb honey here. With the low price of honey and high price of labor, we must have our honey in shape so as to handle it rapidly, and, at the same time, in a neat and attractive form; if it is not, as you have several times mentioned, "gilt-edged honey," it certainly is "border-edged," as those clamps form a neat and attractive border.

Please tell everybody on this coast that our annual bee-keepers' convention will be the first Wednesday in March, at Hanford, and every three months thereafter, *always* the first Wednesday in the month.

J. F. FLORY.

Lemore, Tulare Co., Cal.

Thanks, friend F., for your kind letter, describing your invention. Evidently, you had not yet received your GLEANINGS for February when the above was written, for you do not answer in regard to the manner of closing the ends of your boxes. You also, in tying up, have a double bee-space, if I don't make any mistake.

ARTIFICIAL INCREASE.

HOW AND WHEN TO UNDERTAKE ARTIFICIAL SWARMING.

G. M. DOOLITTLE, *Dear Sir:*—Would it be possible for you to give us an article in GLEANINGS on artificial increase, after the nucleus system?

A. H. NASH.

Santa Monica, Cal.

A few days ago I received the above; and as I have other like requests I will comply, by here giving the three plans of artificial increase which I prefer, after trying nearly all the plans I ever read of. I first wish to say, however, that for this locality I prefer natural swarming to any plan of artificial increase, where only one swarm is allowed from each old colony, and where said swarm will issue in time to prepare both old and new colonies, in good shape for the honey harvest.

The first plan I will give of artificial increase is what is termed by some the "nucleus plan." To be of the most value, the nucleus should be formed 20 to 25 days before the honey harvest, by having enough bees in it to protect a frame two-thirds full of brood, the larger part of which should hatch during the first four or five days, while said comb should contain some eggs just laid, if possible. Besides this frame of brood and bees, the nucleus should contain a frame having a pound or two of honey in it, the whole being set in a hive, and confined to one side by means of a division-board. The next day after making, a mature queen-cell should be given, or a newly hatched queen introduced. In about ten days, if all proves favorable, the young queen will be laying, when I go to the hive from which I formed the nucleus, and select a frame of brood, nearly all of which are about gnawing out of the cells, and add this to the nucleus, always putting a frame of comb or foundation in the old colony

to take the place of the one taken out. I now wait four or five days, when I go to the old colony and take out 5 frames of brood, from which all the bees are shaken (as they were from the last-mentioned comb), when I carry them to the nucleus. I now fill out each hive (I use 9-frames in a hive), with empty comb or fdn. and put on the surplus arrangement. By the above, each colony is made of about equal strength, and the brood is so taken out of the old hive that the colony does not have a desire to swarm. This old colony will have the most field-bees for the first week or so, but the other will soon make the stronger colony of the two.

My next plan is to make one colony from each old one, on the principle of division of the bees, instead of the brood, as in the above case. In using this plan we wish queen-cells nearly mature by the time our first colonies are preparing to swarm. Having such cells on hand I go to a colony preparing to swarm, or one that has its hive full of bees and brood (if the hive is not thus full it is useless to try to increase them), and move it a few feet to one side of its old location, so as to put a new hive in its place. I now look over the combs until I find the one having the queen on it, when I place said comb in the new hive. Next I give them a frame having some honey in it, and then fill out the hive with empty comb or fdn., when about two-thirds of the bees in the old hive are shaken in front of the new hive, and allowed to run in. After this I arrange the frames back in the old hive, putting in a division-board in place of the frame taken out, when the old hive is carried to a new location, where I wish it to remain. After the bees thus removed have become reconciled to their queenless condition I give them one of the nearly mature cells, or a virgin queen which will soon be laying. In this way I have secured my new swarm, controlled all after swarming, and introduced my young queen all to my liking, and with but very little trouble.

The third plan is one I use on colonies which do not swarm up to ten days before the honey harvest, when I proceed to make colonies from them as follows: A hive is filled with frames of empty combs, and placed upon the stand of one of these colonies which has not swarmed, and all the boxes are taken off and placed thereon, then all the bees are shaken and brushed off their combs of brood and honey, in front of this prepared hive, into which they will run as fast as shaken off. Thus I have a colony that is ready for the honey harvest, as they have the queen, bees, and partly filled boxes all in readiness for work. Previous to this, nuclei have been started, so I have plenty of laying queens to use as I need them. I next take all the combs of brood from which the bees were brushed, except one, arranging them in the hive the bees were shaken out of, and carry them to the stand of another colony which has not swarmed. Next I take the comb of brood which was left out, and go to one of the nuclei, taking out the frame having the laying queen on it, and place the comb of brood in its place. Take the frame, bees, queen, and all, and set it in the place left vacant for it when arranging the combs of brood. Now put on the boxes, and, having all complete, I move the colony to a new stand, and set the prepared hive in its place. Thus I have a laying queen, and enough of her own bees to protect her, together with a hive filled with combs of brood, and all the field-bees from the removed colony. The loss of bees to the removed colony stops

the swarming impulse, and in about a week they have so regained their loss that they are ready for the boxes again. In this way I make only one colony from two old ones, but have all in the best possible condition to take advantage of the honey harvest.

G. M. DOOLITTLE.

Borodino, N. Y., Feb. 13, 1885.

WIDE VS. NARROW TOP-BARS.

FRIEND ALLEY'S IDEAS IN REGARD TO THE MATTER.

OF late there has been a good deal said in the journals about the bees building comb between the top-bars, honey-board, or the caps. If the hive is properly constructed, there need be no complaint on this account. I have read something about "nuisances in the apiary;" but in all my experience in bee-keeping, the biggest and worst nuisance is the *narrow* top-bar to the movable-frame hive. Mr. Langstroth saw this defect in the first frames he devised, and soon discarded the narrow bar for a wide one, and at the same time gave his space between the top-bar and the honey-board above.

Now, is it really necessary to have a "sink" honey-board where the hives and frames are made as above? I have never used a narrow top-bar in my apiary, but had occasion to work on hives for other people, where the top-bar was but $\frac{3}{8}$ of an inch wide. The first move would be to pry off the honey-board, and with it several pounds of honey and wax. Before proceeding further, the bees must have time to clean up the loose honey; and then what a fine job it is to get out such frames! It is almost vexing enough to "make a minister swear."

Last year I bought 20 three-frame nucleus hives, all having *narrow* top-bars. If the bees and I live until spring, there will not be one of them on my premises after May 10. What possible objection can there be to a $1\frac{1}{2}$ -inch-wide top-bar? The apiarist who has never used them knows but little about how nicely they work, and with what ease and comfort he can open and examine a colony of bees, compared with the hive having narrow bars. Beekeepers about here have used the former for over twenty years, also *thin* honey-boards, *slatted* honey-boards, and, in fact, all kinds, except those made of perforated zinc; the result, so far as a crop of honey was concerned, was all the same.

The frames having wide top-bars should be spaced so that there will be not quite $\frac{1}{8}$ inch between them at the top, and there should be the same room between the top of the frame and the honey-board, or whatever is used over the frames, and no comb of any account will be put in between. The L. frames with a top-bar $1\frac{1}{2}$ inches wide will just about fill the space of the L. hives; that is, where the hive is $14\frac{1}{2}$ inches wide. The dimensions for a standard Langstroth hive, as Mr. L. has given in his book, are $14\frac{1}{2}$ inches wide, $18\frac{1}{2}$ inches long, and 10 inches deep.

All the frames in the twenty nuclei I received last year were made for hives that should be $\frac{1}{2}$ inch longer than the above. All these frames had *tin* corners to keep them from getting out of square, but every one of them was $\frac{1}{2}$ of an inch lengthwise out of square, and for that reason I shall cut the combs out of every frame, and put them in others that have no tin corners. I never have anything to keep my frames square, except the nails, and none of them are out of true.

I have received several frames lately (samples of the reversible arrangement), and all had the narrow top-bars. To me, this is an objectionable feature; but I did not see how a wide one could be used where the reversing arrangement was affixed to them. Well, I set my wits at work, and soon devised one that the wide top could be used on. A sample will be sent you soon, also cuts, to show them in GLEANINGS. You will see that this arrangement is very simple, practical, and easily applied. The top-bar is held firmly in place, and the frames are as firm as need be. All the work, but nailing, can be done with the circular saw.

Wenham, Mass., Feb. 6, 1885.

H. ALLEY.

Friend A., I know there are some who prefer top-bars more than one inch wide; but before getting out our metal corners I experimented pretty thoroughly, and used hives with top-bars of different widths for several years. Those having a top-bar $1\frac{1}{2}$ inches wide troubled us more in the apiary than any thing we ever used. The bees were continually bridging from one to the other, so as to make the whole top look like a solid chunk of combs and sticks. Somebody (and I am inclined to think it was J. H. Townley, the father of the chaff-packing arrangement) suggested frames $1\frac{1}{2}$ inches wide, with the top-bars beveled off so as to present only a sharp knife edge along the top edges. I think likely these would work better; but the way we handle combs for queen-rearing, it seems to me no width is so convenient as the orthodox $\frac{3}{4}$ -inch. I should be glad to have the experience of many of the friends in this matter.

HOW TO TELL WHEN SECTIONS ARE FILLED, ETC.

IS IT ONLY THE VERY YOUNG BEES THAT SECRETE WAX?

ISEE by Feb. 1 number, Mr. Robbins has been writing for my benefit; and as I have had over twenty letters from other friends, telling me how to find out when the Heddon case is full and capped over, it is about time I should know how to use them to advantage; but, friends, I am as bad off as ever; and although I am thankful for the advice, none have yet told me how to tell when they are full, without disturbing the bees, which you must do when you take off the cover; and before it can be put down, the smoker has often to be used to drive the bees down. With the case I use you have only to lift off the top story, and look through the glass. I use the wide frames the same way, by putting two strips of glass on each side, and cut off the arms so you can set a Simplicity top over them. They can be held together by a small wire or string.

I believe I said once before, that after a bee got old enough to be a worker he could make no more wax. The editor seems to differ. Now, to prove that a worker could secrete no wax, which I claim is a product of the bee which it yields before it is old enough to be a worker, I built me a hive with a wire division-board separating two frames from the others. I put all the workers on one side, and the young bees and queens on the other, with the entrances to each apartment at opposite ends of the hive. To keep this colony of workers strong, I got

1 lb. of blacks from a breeder, 7 miles off, once a week, to make them store honey fast. I fed at entrance, and soon found that they were passing the honey through the screen, and the young bees gave them scales of wax to build comb. I spoiled that by putting in a double screen. They then filled their hive full of honey, but could not cap it. I one day laid out some sections with foundation, and soon found that the bees were cutting it up and carrying it off. It proved to be my blacks, and they were capping over their honey, and I never saw bees work harder; at no time could I find a wax scale on any of these bees. W. CONNELLY.

Ogden, Iowa, Feb. 9, 1885.

Friend C., it is true that in the Heddon case the strips of glass are omitted, that we have been in the habit of putting in our crates for years back; and as the sides of the crate go right out to the weather, it would be hardly advisable to put in glass as in ours. With the crate to go in the inside of a Simplicity hive, however, there is no reason why glass should not be put in if it is wanted.—Your question about the age at which bees secrete wax scales depends a good deal upon what you call a young bee or an old bee. I have always been of the opinion that bees of almost any age could secrete wax for comb-building, if they were obliged to; but Langstroth tells us in his book that young bees—at least the principal part—do the comb-building. Your experiment is quite an interesting one. A worker-bee goes out to the fields when about two or three weeks old, if I am correct; and if it is true, that he never hangs in clusters, nor secretes scales of wax after this age, it is something new to me.

A CHAPTER FROM THE EXPERIENCE OF AN A B C SCHOLAR.

HOW I GOT MY FIRST COLONY.

I WAS in the woods, and by chance found it clustered on a chunk of wood that had been split out of a tree to get the honey, and the party, as usual in this section, left the bees to take care of themselves. When I first saw them my first impulse was to run away; but seeing they were not so much for flight as I thought, I ventured a little closer, and found them nice yellow fellows, but I had no thought of living them; but when my wife heard my story she insisted soon having them that I could not refuse her. The next thing was, "What shall we put them in?" We had no hive, so I took a box about one foot square, bored holes for cross-sticks, and started for my bees; and by the time I got there my heart was beating more than you know, and I was so nerveless that my whole body shook. This is what I call some of my experience. Well, I brought them home without any trouble, and put them on a stand. This was about the last of July, 1883, and the swarm was a small one, so we fed them sugar syrup, and some of my neighbors told me I would kill them, so I quit feeding for about one month; then came the A B C book. I opened it, and about the first thing my eyes met was "Feeding and Feeders," so I went to work according to your directions, and fed them for winter. They were in a box made of 1½-inch boards, and so I put the bees (box and all) into an-

other box, and packed straw between the two; they came through all right. During the winter I bought four more. Now for my report. I commenced in spring of 1884 with five colonies.

First, cost.....	\$ 3.60
Second.....	5.00
Third and fourth, \$3.10 each.....	6.20
One S. hive.....	4.00
100 wide frames and other fixtures.....	42.05

Total.....	\$60.85
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I sold one colony.....	\$7.00
Comb honey, 12 lbs. at 25 cts. per lb.....	3.00

Total receipts.....	\$10.00
The bees owe me.....	\$50.85

How is that for "high"? Oh! hold on! I have eleven colonies here yet. They are worth \$7.00 each. I would not say that, but I could sell them for that money.

THE WAY IN WHICH FRIEND K. AND HIS WIFE MADE PROGRESS DURING THEIR FIRST SEASON.

There is but one man in my immediate neighborhood who has the movable-frame hive, and he has the S. hive; my wife and I did our own transferring, and some other that I did not give in my report. We did it all in time of apple-bloom. It seems to me your bees are harder than the bees here, or at least they do not dwindle as the rest of my bees do. The colony that I gave the queen to, which I got of you, stands the winter better than the rest do, and they had no better treatment than the rest of my bees. They are all in Simplicity hives, with division-boards filled back of them with chaff and old clothes. The colony above mentioned does not fly as much as the rest when it comes off warm, yet they are as strong as any of the rest.

I have some spider-plant seeds of the *Cleome speciosissima*, and it yields lots of nectar. If you want any of this I can let you have about an ounce, at whatever you think right. It grows about 5 ft. high, and branches a good deal. The branches grow about 3 ft. long. I gathered that seed all from five stalks; but, oh what great drops of nectar! and the bees found out that it was sweet, and they carried it all away.

Now, friend Root, for the tobacco, last but not least. I am now 32, and have used tobacco since I was about 14, both chewing and smoking. Sometimes I would quit for a little while, and then at it again, but I was ashamed to smoke where people would see me, and still I clung to it, and it bound me in its chains so completely that now it is no easy task to break its fetters; but, brother (if the word "brother" seems out of place excuse me, but it seems the right one to me the way I use it, that in Christ), I am a teacher in Sabbath-school, and one of my scholars said to me one day, "Why, you have been smoking; I can smell it in your breath." Do you know how that has bothered me since? Just think of a man trying to lead others, when he is blind himself. God does not want the blind to lead the blind, but he wants those who can see to do that work, lest they both stumble and fall, so I have made up my mind to try to quit the use of that filthy weed, and I now take my stand with many others. Will you pray for me? God help me, is my simple prayer. It is no easy task. The spirit is willing, but the flesh is weak. J. A. KIME.

Fairfield, Adams Co., Pa., Feb. 2, 1885.

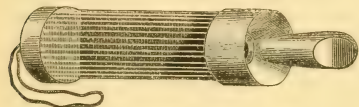
Many thanks to you for your kind letter, my good friend. So the credit of your bee-keeping belongs much to the energy

and zeal of your good wife; and it does me good to learn of instances showing how much we are indebted to our wives.—I shall be very much obliged indeed, friend K., for some seeds of the *Cleoma speciosissima*; and I am rejoiced more than you can tell, to know that you are determined to listen to the voice of God which came to you through one of your pupils in your Sunday-school. Do not, I beg of you, turn back on this message, but hold on and press forward, Christ helping you. You can not tell how heartily I thank God for having given me the means of helping to lead souls to purity and godliness, as well as to teach about the honey-bees.

FRIEND KLIMITZ'S QUEEN-CATCHER.

AN INVENTION FOR PEOPLE WHO FEEL NERVOUS WHEN THEY ARE OBLIGED TO HANDLE QUEENS.

WITH today's mail I send you a sample of what I call my queen-catcher. You may smile at the simple thing, or perhaps throw it aside with contempt; but I assure you it has been for twenty years, and is yet a perfect boon to me.



A MACHINE FOR CATCHING QUEENS WITHOUT INJURY.

Years ago, when I would not think of opening a hive of bees without having my hands protected by thick mittens, it was out of the question for me to pick up a queen with such clumsy fingers, and I had to get up something to help me out of the difficulty. This catcher was the result. All I have to do is to take out the plug from the open end, which has to be made in the shape of a funnel, and set this end lightly over her. As the light strikes her from above through the wire she will instantly run up into the cage, which is then closed by replacing the plug. Catching a queen in this way is just as quick as picking her up with the fingers, and, above all, she is never hurt. For a number of years I have not used gloves when at work with my bees, but I rely mostly on my catcher when I want to catch a queen, because I am a very nervous person, and can not keep my fingers quiet enough when I am in the least excited. They will tremble in spite of all I can do; and the more valuable the queen is, or the more anxious I am to secure her, the more unsteady my fingers are. But with my catcher I am always safe, and would not feel content, especially in swarming-time, without having several of them in my pocket.

To make the queen come out quickly I remove the plug and fold my hand around the cage to exclude the light, when she will run out at once, and into any thing I want her to. The string is only for the purpose of hanging the thing up in my honey-room, for I like to have every thing handy. This catcher I use especially when I want to make some disposal of the queen right away, except introducing. For this purpose I bore the other end out too (not funnel shaped, and as large as the piece of wood will

allow), and shut it with a plug, which is made hollow for about $\frac{1}{2}$ inch, and the hole filled with candy.

Now, friend Root, if you think it worth while to assist the nervous class of bee-keepers by mentioning this queen-catcher, you may do so; if not, you may throw it away. I shall be satisfied in either case.

CHAS. KLIMITZ.

Batavia, Genesee Co., N. Y., Jan. 24, 1885.

Friend K., your idea is certainly very ingenious, and the cage as sent us is a marvel of fine workmanship. Your idea of getting the queen out of the cage is especially a neat trick. I have been annoyed more in getting queens out of the cage, perhaps, than in getting them out of the hives. Very likely, when the queen is first put in there, and is anxious to get out, she would shoot out at once by simply shutting out the light with the closed hand; but after she has been in the cage several days, say by taking a trip by mail, I am inclined to think she would not go out so readily. Your whole implement would make a beautiful queen-cage. I may explain to our readers, that instead of wire cloth a great number of straight wires are used, about the size of a fine knitting-needle. We can furnish such queen-catchers to those who may want them, for an even 10 cents; and if the demand should be larger, possibly less; but I think we shall make them of wire cloth instead of wire rods.

CARP CULTURE IN TEXAS.

A FISH RECEIVED FROM THE GOVERNMENT, DEC. 10, 1880, WEIGHS 24½ LBS., AND IS 39 INCHES LONG, IN SEPT., 1884.

ED. GLEANINGS:—I am not a subscriber to GLEANINGS, nor am I a bee culturist; but my friend Buckner, of this place, is both, and he handed me your journal to see what you and your friends have to say about the German carp. In your Jan. No., 1885, I notice a letter from W. S. Kaler, of Andersonville, Ind., in which he states that he has a carp five years old that is 25 inches long and weighs about 14 lbs. I want to tell Mr. Kaler that I can double discount him. On Dec. 10, 1880, I received from Prof. Baird, 20 carp, from 2½ to 3 inches in length. I cared for them well, and last September I took out one and weighed it. Result, 39 inches in length; weight, 24½ lbs. This was one of my oldest fish. In Jan., 1882, I added 260, about the same size of the former when received, to my pond. I now have in a pond covering one acre in area, 280 old fish, and younger ones without number. My pond when full has a depth of 12 feet, and after a drought of six months' duration last year I had 15 feet of pure clear water. I depend alone upon the rainfall for water.

Now, this is a big fish story, but there are numbers of good men in this city who have seen my fish and will testify to my statements. I have made fish culture a study for the past ten years, the last four of which have been especially devoted to the carp. Carp do not hibernate in this climate, no going into kittles for a long winter sleep. They begin spawning here at two years old; and if well cared for, spawn by the million. They spawn but once a year, and the spawning season lasts only from 4 to 10 days. They begin to spawn here from the 1st to

the 10th of May. Their manner of spawning is as follows:

Males and females get together in warm shallow water; each emits its ova on the surface of the water, and then by fluttering agitate the water, and thus mix the ova of male and female; immediately after coming in contact, the egg is formed, and is about the size of a No. 8 shot. It is glutinous, and adheres to anything it comes in contact with, such as weeds, grass, or trash near the edge of the water. They will not spawn in deep cold water, nor in a shady place; and if compelled to do so the spawn is lost. The eggs will ordinarily hatch in from 8 to 11 days; but if the temperature of the water be raised to 90 or 100° Fahr., they will hatch in from 48 to 56 hours.

You ask Mr. Kaler to tell you how many can be raised in a pond of stated dimensions. This is simply a question of food and oxygen. Hundreds can be raised in very small ponds, if well fed. Oxygen is usually supplied in sufficient quantity by the atmosphere and wind to support them densely.

It will make this letter too long to give detailed plans for making ponds, construction of levees, screens, etc.; but if you desire, I may attempt in another, as well as to give other and further hints on carp culture in Texas.

L. T. WHEELER.

Corsicana, Texas, Feb. 13, 1885.

Friend W., it has for some time been conjectured that enormous results can be obtained in warmer climates than ours by the German carp, and your report is exceedingly valuable and interesting, inasmuch as it verifies these predictions. Our little book on carp culture will be out in a few weeks; and after you have looked it over, we shall be very glad indeed to have you add what you can in regard to the matter that is not already embraced in the book.

GROWLERY.

I DO not know where our moral patents are going to take us. At present it seems to me to have had the effect of stirring up the ugly feelings of humanity, perhaps even worse than politics. When a man has worked hard at something for many days, and passed sleepless nights over it, as friend Heddon mentions, it seems to have become a sort of child of his; and if you want to get into trouble, just abuse somebody's child—say he isn't smart or bright, or something of that kind. Whenever I pay something for an invention, I am immediately flooded with a great number of devices for different purposes. Of late, reversing devices have been beyond anything heretofore known. Well, I have been pained, and made to feel sad, many times, by the way in which my opinions have been received. Somebody writes me he is sure he has got just *the* thing; *his* device is the very center of the whole system of devices; in fact, the center of any thing that can be invented, for all time to come. Like the baby of the household, it is the handsomest, smartest, cutest baby that ever was known, and other babies are smart and cute just in proportion to their resemblance to said baby. Some may be pretty nearly equal to it, but none can be ahead, in the eyes of the father

and mother, and the rest of the family. Now, when one of these devices is submitted to me, and I reply that, in my opinion, it is neither new, novel, nor useful, the chances are that the inventor writes back that my statements are false in every particular—that I want it myself, or it conflicts with some of my own plans, etc. Now read the following:

Mr. A. I. Root, Medina, Ohio:

Your postal card of the 26th of last month is received, in which you say, first, that my device has been submitted a good many times. Second, that you don't think it substantial; and third, that it is very expensive. In reply to your first subterfuge, I deny most emphatically that it has ever been submitted to the bee-keepers of America, and no doubt your immense stock of charity will enable you to excuse me for doubting if anybody besides myself ever submitted the same device to A. I. Root. In regard to its strength, I can inform you that I have tested an eight-frame hive with 216 pounds weight without springing the supports the least particle, and I wouldn't be afraid to wager my head they would stand double the above test. As to its expensiveness, I can furnish a machine and directions for making them for \$1.25, whereby any bee-keeper can make his own reversible-frame supports at the enormous cost of two cents per hive. Supposing he had 100 stands of bees, his entire cost would be \$3.25. Now that I have answered your objections, I desire to say a few words in regard to the reasons that prompted you to make them.

In GLEANINGS of Feb. 1st you say, in your closing remarks, "Whatever you send me that I make use of, I am willing to pay for;" and in order to avoid so doing, you wipe me out of existence, by announcing on a postal card that my device is old, unsubstantial, and very expensive, and then go to work and commence manufacturing my identical invention, making it of wire instead of tin. Now, I have the supports made both of wire and tin, but I prefer the tin, and therefore sent you the tin supports.

I supposed when I sent you the model that I was dealing with a Christian gentleman, and therefore didn't expect you to take any undue advantage of me.

Feb. 12, 1885.

The invention above alluded to is simply a projecting arm, hinged so it will turn down out of the way, or turn up at right angles, so as to hang on the rabbet. When reversible frames first came before us, this device was sent over and over; and, in fact, years ago, when I offered \$25.00 for a certain sort of chaff hive, the same thing came repeatedly. It takes eight nails to attach the device to any frame, and I should say the time required to put them on each frame, and drive these eight nails, would be an objection, if the four arms required for each frame were furnished for nothing. Now, friends, these devices have been coming to me for different purposes, required in handling bees, for nearly twenty years. They are labeled and dated, and placed in our attic, for future reference, the inventor's name being on each. When you get up something that you think is ingenious and useful, and wish the benefit of my experience, or wish to know what others have done in that line, I am glad to give it freely, and I do not think I shall ever

make any charge for it. It would lessen our labors a little if you would send along an addressed postal card, for I think a postal card will hold all I want to write on most of the devices that come with every mail. If you think I have passed over your invention too hastily, and wish me to have a clerk search the attic for what has been sent in in the same line, I will do for you, charging you what it costs me. I believe, however, my memory is pretty good; and when an invention has once been placed in my hands, with an explanatory letter, I seldom if ever forget the principal features pertaining to it. If you do not like my way of doing business, let me suggest that you quietly "trade at some other shop," without calling me names, or accusing me of wanting to steal your ideas.

ARRANGING THE HEDDON HIVE FOR THE EXTRACTOR.

SOMETHING ABOUT THE KIND OF LUMBER TO USE FOR HIVE BODIES.

OUR friends will notice in the cut on page 85, that there are strips clear around, about one inch below the top of the hive. I supposed these were intended for an upper story to slip over, as in the old Langstroth hive; but to be sure, I sent for an upper story, arranged as it is to be used for extracting. It came, and with it the following reply from friend Heddon:

Bro. Root:—The cleats around the upper edge of the brood-chamber are designed to help the appearance of the hive, and serve as handles to lift it by. All upper stories (either comb or extracted) do rest on the honey-board, and we object to any telescoping about hives. JAMES HEDDON.

Dowagiac, Mich., Feb. 12, 1885.

Now, with the exception of these strips, the upper story is exactly like the lower one; and if the bottoms were not permanent, they could be used interchangeably, and one piece of the hive could be dispensed with; that is, we make hive bodies, and that is all—no upper or lower story about it. In packing hives close together, these strips are right in the way. Hand-holes, like those we have in the Simplicity hive, would, it seems to me, be just as convenient for handling.—One thing more. Our Simplicity hives which go out by the thousands, and are scattered all over the face of the earth, almost, have been criticised somewhat, but I believe every Simplicity hive we have ever sent out can be used interchangeably with every other one, no matter if you get one from Australia, and another from the Sandwich Islands. Well, I sent to friend Heddon for a hive for a sample. As he did not send an upper story, I sent the second time for one. This upper story sits loosely right over the lower one. When put in place, and frames removed from the lower story, and put in above, the bottoms of the upper frames touch the tops of the lower ones. When placed with the upper story on a honey-board, the bottoms of the frames touch the honey-board. I suppose the lumber of which the upper story is made shrunk, in seasoning, and I presume it is *mainly* because it was made of

what we call whitewood, and we have long since decided that whitewood is entirely unfit for hive bodies, just because it shrinks so as to spoil every thing. We have never found any thing that answered like pine.

BEE CULTURE IN TENNESSEE.

EDITOR GLEANINGS:—Of all the reports and correspondence in GLEANINGS, I see but little from this part of the South, so I will give a little of my experience in bee culture. I have been for about fifteen years a bee-keeper on a small scale, ranging from 10 to 25 colonies, always making it a paying business, getting honey enough to supply my family, and some to sell; and recently finding myself unable to closely follow the pursuits of the farm, and having a natural love for bees, I bought 40 colonies on the 5th of May, 1884, in the Langstroth hive, for which I paid \$200. This, added to my 24 colonies, put me right in the midst of 60 colonies at the commencement of the honey season. So I went to work, and I suppose you know how busy it keeps a fellow to keep it done up in good order. But after a few days of hard work I had 36.00 lbs. of good poplar honey. In June and the early part of July I got about 1000 lbs. of linden honey. I sold all except 500 lbs., at 7 cts. wholesale, so you see I got my money back and all expenses paid, and some money left. I took only about half my linden crop, and well it was; for now it is needed in the combs to give to some colonies that are nearly destitute. The linden crop was very light, on account of excessive rains.

Our principal fall crop here is gathered from a weed known as wireweed, or tanglefoot. On account of drought it was an entire failure in 1884. When the season suits, it yields an enormous crop of honey, blooming from about Sept. 10, until killed by the frost. This plant has been with us but a few years, and has taken possession of nearly all our waste and glady lands. I must mention here that I was sick in October, when my bees needed attention, after the failure of the fall crop, and had five colonies to die for want of attention. I did not allow my bees to increase, having as many as I wanted, and no trade established for bees.

I live in a fine country for bees, the northern portion of Giles County, Tennessee, with but few bees near me. I do not think there are more than fifty colonies in a circle of four miles around me, and they are principally black. I am going to try to Italianize them this year, in order to get rid of black drones. The owners of these are generally men who do not care, and most of them want an overcoat and a bed-quilt over their heads before they venture to open a hive, so you see I have none of the advantages of social and friendly intercourse with intelligent bee-keepers, that some have.

I forgot to say, that the imported queen I got from you through friend W. A. Compton, last August, is doing well. We have had a severe winter up to this time. The bees did not get to fly well in the whole month of January. For two days past it was pleasant, and nearly all the 59 colonies took rye meal freely.

I ran altogether for extracted honey; never used, and, in fact, never saw any of the comb sections. I shall probably have a carp-pond to talk about in the future. J. N. GRIGSBY.

Lynnville, Tennessee, Feb., 1885.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

WATER FOR BEES.

I RECEIVED GLEANINGS and the A B C book in good order, and have been reading where you water your bees, but can not see where you water them as I do mine. I have a trough 12 feet long and 8 inches deep. I fill this about $\frac{3}{4}$ full of clean corn-cobs, then pour on water till it just comes to the top of the cobs. By not having the trough full, the wind does not strike the bees while they are drinking. I think it is better than a board, as the bees seem to like to suck the water out of the cobs. I never had any drowned in this way, nor had any bother by my bees going to my neighbors' horse troughs. I place this trough five rods from my apiary.

I am trying to winter 60 colonies, but do not know how they will come out, as I have them in my cellar.

My trough is V-shaped. I like it better than upright sides, as the bees can run up it and start off better. I sprinkle a little salt at one end of the trough on the cobs, so that they can get it when they choose.

WILLIAM EDEN.

Green Lake, Wis., Feb. 10, 1885.

MY REPORT FOR 1884.

I commenced in the spring with 7 colonies; I increased to 15, and took 250 lbs. of honey. The season was very unfavorable. Old bee-keepers say it was a "bee-famine." I will ask one question. Is it a safe way to feed bees, by pouring sugar syrup into empty combs, and hang them in the hives for the bees?

JAS. E. THARP, SEN.

Harmony, N. C., Feb. 10, 1885.

Friend T., your plan of pouring syrup into combs is a very old one. It is daub, and is liable to start robbing, is perhaps the greatest reason why the plan has not found much favor. There is one thing about it, however, it does not require any feeder to be put in the hive, or to be taken away, and the combs are always all right for the honey when it comes. The syrup must be let fall from a distance, to have it go to the bottom of the cells; and where much feeding is to be done, the combs may be placed in a tub to avoid wasting and spattering, and the syrup poured through a sort of sieve or skimmer, so that it shall fall in many small streams. By this means combs may be filled very rapidly.

HOW TO MAKE BEE-CANDY.

I send you to-day a sample of some bee-candy, and this is the way it is made. Take sugar and water, and boil until it is soft wax, being very careful not to stir after it is dissolved; then set carefully in a cool place until partly cooled, and then stir until it thickens, and take immediately in your hands and work.

A CHEAP WAY OF CONNECTING SECTIONS SO AS TO FORM A RACK OR CRATE.

After looking over Mr. Smith's honey-rack on page 841, December 15, I thought I would give a description of a cheap honey-rack that we use. We use 8-frame hives one foot wide. We got strips of tin cut one foot long and one inch wide; the tinner turns them up to a miter in a machine. Take thin

boards the exact size of the box; set six boxes together with a board at each end; place a strip of tin over each corner, and tack to the board to use on the hive. We lay a thin strip of wood one inch wide across frame to support the corners of the boxes. This arrangement can be used on almost any kind of a hive. When we want to tier them up we take off the boxes and put empty ones under, and reverse the boxes the bees have worked in; putting them on top, there will be no space between the boxes for the bees to get at.

MRS. ORETTA REED.

Washingtonville, Ohio, Dec. 27, 1884.

My friend, your honey-rack is on the plan of the one mentioned on page 162, only you use tin where friend Flory uses wood. The idea is quite an old one, and I do not really know why it was abandoned, for it certainly seems to possess very decided advantages. With the folded tin strips, you are obliged to have a bee-space at the bottom; but it seems to me, as you say, that it would be very much better to have sections come close together in bee-spaces in the second tier, and the same in the third tier when a third tier is used. We can furnish folded tins of the length you mention for 50 cts. per 100, or any desired length at a cost of $\frac{1}{2}$ cent per foot. Folded they nest into each other so as to be shipped in very small space.

WHAT TO DO WITH BEES THAT ARE STARVING IN THE SPRING.

Our bees get water every day that is warm enough for them to fly. There are a great many bees starving in this country. They are in old-fashioned hives, those that are starving. There are a great many black bees in this country. I have had 3 starving swarms come and try to go into my hives in the last three weeks, which makes trouble with the bees. We had one yesterday, which is freezing to death this morning as they lie on the fences and other places, and there is a brisk northern breeze this morning. What would you do in such cases? I have named our apiary "Live-Oak Apiary."

Cedar Valley, Texas.

J. H. MORROW.

Friend M., I should feed the bees, by all means, instead of letting them hang out in the cold to freeze. A very few cents' worth of sugar would fetch them along till plants bloom, and it hardly seems as though there were a locality anywhere where bees will not be worth something after being wintered over. Put them in hives, and give them sugar to their hearts' content, and they will repay you, may be a hundred fold in just a few weeks.

USING A SLATED HONEY-BOARD TO PREVENT THE BEES FROM STICKING DOWN THE CRATE OF SECTION BOXES.

The cut of honey-board on page 47, Jan. No. of GLEANINGS, is nearly the same as the one I used last season. Mine was made out of $\frac{1}{4}$ -inch lumber, cutting the slats with a slitting-gauge. The slats were cut the full length of the board, excepting about an inch and a half of each end, and a $\frac{3}{8}$ -inch square cleat nailed across each end. When the honey-board is on I have a $\frac{3}{8}$ -inch bee-space above and below it. No comb was built between honey-board and sections, but it was fastened down to wide frames.

W. E. THOMPSON.

Ladsonia, Mo., Feb. 14, 1885.

ICHTHYOLOGY—CARP IN TEXAS.

Is that the name? Well, I see so many saying something about carp and carp-ponds, if you will allow me I will "speak my piece." The carp are like a drove of pigs—just give them room to turn around and all is well. A thousand carp in a pond of $\frac{1}{2}$ acre would find ample room, if the water could be kept from three to five feet deep, and all you would have to do would be to feed plenty from May to October.

L. T. Wheeler, Corsicana, Navarro Co., Texas, I am told, has a five-year-old carp that weighed last summer 25 lbs. R. C. Mabry, Blooming Grove, Tex., received from the U. S. Fish Commission, Jan., 1884, seven small carp, 4 months old and 4 inches long, which he put in a small pond of $\frac{1}{2}$ acre. Six of these washed out during the terrible floods last May, and in August he took up the remaining carp and found that it measured 16 inches, only 12 months old. The carp is the best fish I ever saw for our hot-water tanks of Texas. I kept 50 carp, from 8 to 20 inches in length, all through the hot summer of 1884, in a pond not over 50 feet long and 20 feet wide, and a greater portion of the time only 10 to 12 inches deep; and every day they were ready to receive their feed, and would come as quick as that many pigs in a pen.

B. F. CARROLL.

Dresden, Texas, Jan 26, 1885.

A SUGGESTION FOR USING THE HEDDON REVERSIBLE FRAME FOR FRAMES IN COMMON USE.

In regard to the Heddon reversible-frame device, I would suggest stout strong hoop iron for a hanger, bent at top end, say 2 inches at right angles, so as to screw fast to under side of top-bar. Any regular-made frame, projecting ends cut off, will then fit, as the end spaces are wide enough to admit the iron when it would not wood. For proper depth, simply remove bottom-bar, and cut off of end of upright pieces enough to allow bee-space over frames, and nail bottom-bars on again, and you have it.

Baltimore, Md., Feb. 9, 1885.

C. GARWOOD.

KEEPING BEES ON THE ROOF OF A THREE-STORY BUILDING.

I have often thought I would write and give you my experience in bee-keeping. I purchased one colony of Italians in the fall of 1873, and wintered them all right in one of your chaff hives. In the spring they came out a rousing colony; and as I moved to live over the store, and had no other place to put them, I placed them on the roof of the three-story building, which is flat. I increased them to three by artificial swarming, keeping the queens' wings cut, and in the fall I had two good colonies, and one small one having enough bees to cover two frames. I got about 20 lbs. of honey in comb, but I fed them about 20 lbs. of syrup, made from sugar and honey; and up to the present time of writing they are all, so far as I can see, in good condition; in fact, I may say I took a look at the smallest colony, and believe they have somewhat increased. So much for wintering on the roof.

J. E. HOWDEN.

Hamilton, Ontario, Canada, Feb. 10, 1885.

WHO IS THE INVENTOR, AND TO WHOM BELONGS THE HONOR, ETC.?

In the issue for Feb. 1st I gave a description of a chaff winter tenement hive. Since then I have received a letter from Oliver Foster, claiming that he is the inventor of the hive described. While I did not think for one moment that it was an invention

of his, there might be some that would be impressed that it is some of my own origin. I want it strictly understood, that I mean to give honor to whom honor is due; and if it is an invention of his, I hope the bee-keeping fraternity will give him the credit of it. If the chaff tenement hive is an invention of Oliver's, I should like to know it through GLEANINGS. As I supposed it was almost an exact copy of the tenement hive, I thought it was an invention of longer standing. A good many of the bee-keepers are copying, and claiming and publishing in a threatening manner inventions as their own, belonging to others. I hope the fraternity will not countenance it, for we should consider it a dishonorable act.

W. S. DORMAN.

Mechanicsville, Iowa, Feb. 11, 1885.

Friend D., I do not think anybody would gather from your description that you meant it to be understood that you were the inventor of that plan for wintering. I agree with you, that there is getting to be a little too much said about who is the inventor, and to whom does the honor belong? So far as I am concerned, any invention that I have ever made is free to everybody to use, and it does not matter very much whether I get the credit or not. There is one thing, however, that makes it necessary to bring these things up, and that is, when a brother begins to claim this, that, and the other as his own invention, and to threaten others if they use it. Then sometimes it becomes necessary to hunt up the facts. But I think we ought to do it in a kind and Christianlike spirit, remembering that it behooves us to act like those whom Paul mentions as being prompted by that spirit that "thinketh no evil."

REVERSIBLE FRAMES, AND ———.

I send you two reversible-frame attachments. If I have copied yours or Mr. Thompson's, I beg pardon; if not, are they any good? You can let us know through GLEANINGS, and give credit only where it belongs.

Friend Root, I wish to inform you that your "orthodox" rule won't work in the West. Of course, it will in the East, where the fair sex are in the majority; but in Iowa the fair sex are in the minority by about fifty thousand, and some one must stay out in the cold. No doubt the same state of affairs exists in Minnesota; and if it is as cold there as it is here now, it won't take long to freeze out. Bachelors and widowers are like trade-dollars—not the right stamp to be at par. We shall have to insist on female immigration, and lobby a bill through Congress to help us out, if you don't allow girls to come as well as price lists, when both are needed, and you have them idle. I have not had one of your lists later than April 1, 1884, but several of them.

B. F. PASLEY, 13—28.

Zearing, Story Co., Iowa, Feb., 1885.

Your device, friend P., is exactly what we had a little time ago, and, in fact, pretty nearly all the devices that are sent in now are only repetitions of what we have been working on.—In regard to that other matter, I am really afraid I am not competent to advise. As you state it, it is a bigger problem than I had any idea of. If it is really as you state, I do not know but you will have to scrape up a few stamps, and then take a hurried trip out here. May be you have got some relatives that could pave the way a

little, and then make the orthodox plan work all right, after all. We take great pleasure in sending you a price list. Our girls are not as plentiful as price lists yet; and although as a general thing they go everywhere I send them. I am afraid it would be straining my authority a little to direct such a trip as you suggest. But after all, now, may be you are not in the same fix that friend Smith says he is, as related on page 61. May be you are speaking for others.

WEIGHT OF SECTIONS.

On page 82, friend Hutchinson says: "But, suppose a section *does* lack $\frac{1}{2}$ ounce, or even an ounce, of weighing a pound, what is the objection? It will pass for a pound section, and dealers prefer a section that falls short to one that overruns." That may satisfy one man's conscience, and not another's; but to say nothing of the moral question, is it not to the interest of the apiarist, at least so far as the consumers are his own customers, to give full weight, or a trifle over? I believe it is understood that consumers are sometimes of a different mind from dealers.

BURDETT HASSETT.

Howard Center, Iowa, Feb. 10, 1885.

Friend H., I think you misunderstand friend Hutchinson. We always sell our comb honey by the pound; and while it is desirable to have sections weigh exactly a pound, they so seldom do it we always place one on the scales as it is put up. Friend Hutchinson meant to say that dealers prefer to have them run under instead of over, even though they do weigh them up when sold. Shall we not be a little careful about ascribing to others a want of conscience?

LOCATING BEES CLOSE TO THE RAILROAD.

What will the damage be to my apiary to have a railroad come within ten rods of it? It comes so my bees have to cross the track for the greater part of their honey. There will be the smoke and jar, both summer and winter. A man tells me, who has an apiary near the railroad, that it is five minutes before he can see a bee come, after a train passes. I mean an apiary of 100 to 150 swarms.

FRANK H. WHITE.

Stoddard, Vernon Co., Wis., Jan. 20, 1885.

Friend W., I do not believe your bees will be very much annoyed, unless it is on one of the large roads where trains are running almost every hour. If the road runs north and south, there would be less inconvenience from the smoke of the trains if you were on the west side of the track. Our apiary is but a little way from the cars—perhaps 100 yards or more, but we never experience any inconvenience, unless it is when the wind is in the east. So far as the jar is concerned, I do not believe the bees would mind it much, if any; for if it is of daily occurrence they will soon get used to it.

BEE CULTURE IN NEW JERSEY, ETC.

In June I made 6 swarms in a few days. The weather was too hot for them, and I lost one. They did not do much till buckwheat came, then work commenced. The sun got hot, and combs melted down. I took out 9 frames one afternoon, and washed the hive out with water, so that the bees could get in the hive again. I took one hive to the fair, showed it up nicely, and got a special premium

of the small sum of one dollar. How is that for the Hunterdon Co. Fair?

I took of surplus honey, about 150 lbs.; sold about 100 lbs. for \$20, and have five new swarms at present. How is that for a beginner in the bee-trade? I talk bees every day, and tell them it is nonsense to wait till they swarm, when one can make a swarm in 15 minutes. Bee culture is a new business in this part of the country; only four men in this section have frame hives. I tell my friends that I make my own swarms, and they think it impossible. I made 45 hives, and I advertised them, and scattered them almost all over the county, and I have fifty now almost done, and all sold when the season comes. I have about 25 swarms to transfer for my friends in the spring, and I could sell 100 if I had time to make them. We have a factory in the place, and we are cutting hives for King & Aspinwall, of New York. Next September, peaches will be ripe. If you have any spare time, take a trip to Jersey and see us. We ship some nights, 25 cars loaded down.

WM. E. SHEPPARD.

Flemington, New Jersey, Jan. 19, 1885.

HONEY FROM RED CLOVER.

I send you by mail a small sample of red-clover honey. Since I have made the statement that my bees gather honey from red clover, I have had several letters from different ones, wanting to know what the color and flavor are like. A great many think it is not true, that there are bees that will work and gather honey from red clover. I would request you to examine and taste the honey, and give your opinion of it as to its color and flavor. If the sample sent is not quantity enough, I will send a larger package. You will see that this honey has the flavor of bumble-bee honey, and, as you know, the most of the bumble-bees gather their honey from red clover.

F. BOOMHOWER.

Gallupville, N. Y., Dec. 22, 1884.

The sample sent has the flavor of bumble-bee honey very perceptibly, and it is about like the honey called red-clover honey when there happens to be a good flow when red clover is in bloom. It is so little different from ordinary clover honey that one would not be likely to think of the difference unless his attention had been particularly called to it. Any one who has robbed bumble-bees' nests, and tasted of the honey, will readily recall the peculiar flavor when his attention is directed to it.

A SUGGESTION IN REGARD TO SAVING THE MANURE FROM POULTRY.

I have a little interest in your poultry column, and should much prefer dry soil to put under your hen-roosts, to ashes. Ashes will neutralize or dissipate a large portion of the fertilizing property of the manure.

L. C. WHITING.

East Saginaw, Mich., Feb. 4, 1885.

Thank you, friend W. It occurred to me, after that article had gone to press, that I should have advised road dust instead of ashes. If I remember rightly, the crop of corn I raised in my boyhood by use of poultry manure was managed by mixing the ashes and poultry manure just as I planted the corn. As it was immediately covered up, and mixed with the soil to a considerable extent, probably a little loss of ammonia ensued.

THE WAY FRIEND TOMLIN FINALLY GOT HIS TWO QUEENS INTRODUCED.

I commenced bee-keeping last spring, with three colonies of bees; increased to seven; got only 20 lbs. of section honey, for the honey crop was a failure in this locality. I had black bees. But in October I bought two fine Italian queens, untested, of A. D. Stith, of Pleasant Ridge, Ky., both of which proved pure. I had studied the A B C book, and of course I thought I could introduce them without any trouble; but I was mistaken. Having tried all plans in that book for four days, I took the cage from the hive, and shook the bees off. I took four frames filled with brood, and placed in another hive. After three hours I liberated the queen with the young bees, which had hatched out; after 36 hours I took the four frames, queen, and young bees, and placed them in the old hive. They were received with kindness, and did well afterward. I raised five queens, which I gave to my other colonies. All did well, all pure but one. At this date most of them are Italians, and doing well in the Langstroth hive with chaff cushions above.

THOS. S. TOMLIN.

Gardnersville, Ky., Feb. 10, 1885.

USING HEDDON'S CRATE ON CHAFF HIVES.

It strikes me your Hutchinson honey-boards will be "no good" for the chaff hive, unless you make a larger size especially for it. I find it most convenient to use the Heddon case to raise comb honey in the chaff hive. I enlarged it so as to nearly fill the top of the hive, leaving just room enough to insert the fingers to take hold of the handles to take it out. It rests on knife edges of tin, and the bees can not stick it down with propolis, but they will build up from the brood-combs; and if the new honey-boards will prevent this, I certainly want them. My cases hold forty 1½-inch sections, or thirty-two 1¾-inch. The honey-board would need to be about 17 x 20 inches, to go under these cases, or wide frames either, I should say. But a strip of wood will have to be inserted in the upper rabbet, in case wide frames are used to raise them up the proper distance.

CHALON FOWLS.

Oberlin, O., Feb. 13, 1885.

Thanks, friend F., for your suggestions. We can make a larger honey-board for chaff hives, if need be. The brood-chamber to the chaff hive is the same as the brood-chamber to the Simplicity hive, and therefore the same honey-board would cover it; but as this honey-board would necessarily reach above the ledges around the top of the brood-chamber, I do not see how we can manage it nicely without a larger honey-board, as you suggest.

CLIPPING QUEENS' WINGS TO PREVENT THEIR SWARMING.

Although I am not a bee-keeper on a large scale, I will tell you of a little incident that happened this past swarming season. I do not know that it is any thing new, but I never heard of any thing of the kind before. I had one swarm whose queen I clipped the year before (and as that is the only one I had forgotten it). One day as I was going to dinner a large swarm issued from this hive, and I waited for them to eluster; but they all came back in the hive, and then I knew what was the matter. The next day I was obliged to be away (but my wife was at home), and about noon they came out again,

and as she could not move the hive they went back again, and then I watched them for a week after, and they never came out again, but went to work with a will, and stored more surplus than any other swarm I had. Why would that not be a good way to prevent swarming?

P. E. TWISING, 6-10.

Kipton, Ohio., Dec. 29, 1884.

Friend T., the difficulty with your plan is, that the queen will many times go out in the grass or weeds, and get lost; and very likely yours was lost, and they raised a new one. The plan is essentially the same as the one given by Mr. Quinby, years ago. To prevent the queen being lost, he had what he called a "queen yard." For some reason or other, one after another has dropped the process. I do not believe it would pay to lose a laying queen in the swarming season. You might get a good crop of honey with such; but if the queen had been saved with a few bees out of that big swarm, you might have had two crops of honey instead of one.

SETTING BEES OUT FOR A FLY IN FEBRUARY AND MARCH, ETC.

Having very recently subscribed for GLEANINGS, I received my first two numbers last week, and must say that I am highly pleased with their contents, and my little daughter Maud was so delighted with the juvenile department that I fear I shall not get to see each number until she gets through with it hereafter. Well, all right, if it is so. Any thing to induce our children to read.

I have sold the most of my comb honey, being put up in 2-lb. sections, at 25 cts. per lb., and could sell more at the same price if I had it. I have been formerly setting my bees out in February to take a fly; but if it is not necessary it will save considerable work and trouble.

S. R. MORRIS.

Bloomington, Ohio, Feb. 4, 1885.

Friend M., I would leave the bees in the cellar just as long as they are quiet, and seem to be doing well. In our locality I think they will be far better, as a rule, if kept in during the whole month of March, and some seasons through a great part of April. If, however, you can not keep the cellar cool enough to keep them quiet, and if the weather should be favorable, set them out. Our neighbor Rice, who is so successful in cellar wintering, sets his out when they seem to demand it, and then puts them back again, keeping them until pollen is to be gathered, if he can. I would not encourage bees to fly in March, or April either.

THE YUCCA, OR SPANISH BAYONET.

In regard to the yucca, or Spanish bayonet, of which you give an engraving on page 102, you are mistaken when you say that the engraving is the same plant as the one that I sent you a photograph of. The one represented in the cut is of a different species, a native of Arizona; its habits of growth are entirely different from the *Yucca baccata*. The Arizona yucca grows somewhat like the palm-tree, each year adding to its height, with the sharp-pointed leaves all the way up the body. The one shown on page 102 is evidently a young one, and has just started to raise its head above the surface of the ground. This yucca is, however, more useful than the one from which the brushes are taken, as it has been lately discovered that the fiber of the inside of the stalk is very useful for the manufacture of pa-

per, almost equal to parchment, as it is almost impossible to tear it. At our county fair last fall were specimens of this plant, some stalks 12 or 14 inches in diameter, with samples of the pulp, just as it is taken from the stalk, through all the different processes of manufacture, to the finest of paper. Some *lath* were also shown that were made from the pulp. This entire display was taken to New Orleans; and if you wish to take the trouble to look it up, you will find it in the California State Department.

Take one more close look at the plant you have shown, and at the photograph, and you will see that, like your Cal. mountain sage, it "*ain't* right." I was in hopes that you would give your readers a view of this beautiful plant. I am sure that they would all appreciate it, and might help you out in it. I will give \$1.00 toward it.

ABOUT THE WHITE SAGE OF CALIFORNIA.

All that ails these white-sage pictures is, that there are several species that very much resemble each other, and some distinct hybrids. One will send a sample, calling it white sage; then you have a cut made from it, then some one says, "It ain't right," and sends you a specimen that "is right." I have not yet seen a correct representation of the kind we have here in our county. The small branch in the upper right-hand corner of the cut on page 711, Vol. XI., shows the flower all right; but in the large plant, the buttons are too large and prominent, resembling the black sage, or the cross between the white and the black. There is a species that grows south of here, called the "San Diego" sage; another north of here called "Ventura" sage, both different from the native of this county. All claim that the kind that grows in their part of the State is the true white sage. I think that it will be well to wait until the "*doctors*" do agree which is the white sage.

W. W. PLASS.

Duarte, Cal., Feb. 12, 1885.

Friend B., a nice engraving of the plant you send would probably cost fifteen or twenty dollars. I will stand half of it, if there are enough interested to stand the other half, and we will then all have a look at one of your wonderful tropical productions. Some years ago we were told that this plant bore honey by the teacupfuls. It might have been a tablespoonful, however, but it was somewhere along there; and if we get an engraving we want you to tell what you know about the honey from the yucca. We have some growing in our garden; and while they are beautiful flowering plants, we have never seen any bees around them.

A BRIEF NOTE FROM FRIEND WILKIN.

I was quite chagrined because I could not call and see you on my way home, but I could not help it. I got my ears frost-bitten in Kansas, but am here now with my family, amid sunshine and flowers. The winter has been warm, and bees are breeding finely, whilst the fields and mountains look green. I hope you have the honey that my apiarist sent you ere this. It is not with pleasure that I look back at the demoralized state of the extracted-honey market in the east through adulterations.

R. WILKIN.

San Buenaventura, Cal., Jan. 27, 1885.

The honey you mention, friend W., is safe in the lunch-room, and I do not see how your California extracted honey can demor-

alize the market, if it is equal to the lot sent us, unless it created a panic among consumers to see who should get a pitcher full first. By the way, during this cold weather it is a pretty hard matter to get it into a pitcher or other utensil, unless you cut it with a knife, and still it does not candy in the least.

"THESE FISHES," ETC.

I am more than delighted with those articles that have appeared in GLEANINGS on carp and carp culture. It was always a fine sight to me to see a fish swimming in the water, and when, about two years ago, an Ohio paper fell into my hands containing articles on carp I took fire at once, and went out and sat on the fence and studied all over the farm for a site for a pond, but had to give it up. But the fever is running so high now when I learn that these fish grow so quickly, and become so tame, that I believe I will have a pond somehow. I have a spring that affords some water all the year round, and I can catch some off from the barn; and if that will not do I have a supply that I can raise with a wind-mill. I shall begin on a small scale, as we do in bees; then if it works all right we will fix it up nice with evergreens on the west and north sides. Give us all back information quick, for the gravel will have to fly as soon as the frost is out of the ground. I for one have no objections to your articles on poultry, strawberries, or any thing else of home interest. I should prefer something for every issue, for all work and no play makes Jack a dull boy.

A. S. AUSTIN.

Davidson Sta., Mich., Feb. 13, 1885.

Friend A., you can have a carp-pond on any farm where it rains any reasonable length of time, and where the soil is not so sandy and gravelly that water will leach away. Wherever the soil will permit of making a watering-place for cattle, to be supplied by rain water, you can make a carp-pond. A living spring, even though the amount of water be quite small, will be an acquisition to such a place.

CLEANING SMOKER-TUBES.

Let me tell you how I arrange a smoker so the tube can be cleaned quickly, without getting dirt into the bellows. Bore a $\frac{3}{8}$ or $\frac{1}{2}$ inch hole in bottom of bellows, in line with cold-blast tube; close it with a tin slide or button. When tube becomes clogged, turn bellows up, push slide to one side, and punch out dirt with wire.

C. G. KNOWLES, 54-62.

Portland, O., Feb. 9, 1885.

Your plan has often been suggested, and is a good deal used, friend K. We have sometimes thought of making our smokers in the way you mention, but there would be always a liability of leakage of wind where this hole is made in the bellows-board, and the little wires we now send with our smokers make it pretty easy to rake out the tube from the nozzle.

HEDDON'S HONEY-BOARD.

I have just read Jas. Heddon's letter in GLEANINGS, Feb. 1, page 98, in which it seems to me that friend H. lays a good deal of stress on the value of a slatted honey-board that I saw in use on a Langstroth hive six years ago. It was an old hive, and looked as though it might have been in use 8 or 10 years. This board had the space above and below, with the broken joints, all as Mr. Heddon describes.

Michigan City, Ind., Feb. 1, 1885.

A. S. VAIL.

REPORTS ENCOURAGING.

WHAT A HALF-POUND OF BEES DID AFTER JULY 28.

I HAVE thought many times of giving you a little history of the half-pound of bees that I sent to you for about a year ago the 28th of last July. They arrived here so that they commenced work about the 1st of August. The queen proved to be a very prolific one, and nothing but the lateness of the season kept them from swarming. The hive was actually full of bees. Others here said to me that it was the largest swarm of bees they ever saw. But I am going a little too fast. I haven't told you about the honey they made. They filled their hive completely. We took 18 lbs. (8 boxes and one frame). The whole weighed the above amount. I was so proud of my success that I have been afflicted ever since with the same kind of fever that Mrs. Harrison described in GLEANINGS. I've had the antidote tried on me a great many times, but I'm not cured yet. My experience in 1884 beats any thing I have heard of yet. This swarm that I have been telling you of threw off a swarm the 4th of June, a splendid large one, and again the 19th. In July that old queen threw off three swarms. I don't know that one could say they swarmed three times, but she laid the eggs for them all, and they kept on swarming. The last came off the 1st of Sept. I have them now in good condition. They were out for a fly to-day—13 swarms in all, all good large ones but two. These I picked up their queens, and let them go back to their hives. Some of the swarms were large enough to fill a pail when we put them in their hives. Their frames would be filled with honey in two weeks, except the space they used for brood.

One of the swarms went away. They went in their hive all right, but in about two hours they came out and went away. We chased them across fields and pastures, but all to no purpose. They could fly faster than we could run. It seems almost incredible that so many swarms could come from just one queen in so short a time.

I am going to tell you of a swarm that came to us in 1883; that is, what they did last summer. They were a pretty good swarm, but not so large as the other one. I fed them in the spring with syrup and rye and oats ground. During the summer they filled 190 one-pound boxes. I took off, late in the fall, several boxes that were partly filled. I think I can safely say there was 10 lbs. of it, although I did not weigh it. I sold the honey, most of it, for 18 cts. per pound.

Now, Mr. Root, you can put this in your wastebasket, if you like. I just wanted to tell you how well my bees have done. I am looking forward to the time when they will be at work again, with a great deal of pleasure. I love to work with bees. I have often seen poor women trying to get along, perhaps working over the washboard, I always feel as though I wanted to ask them why they don't try bee-keeping. It is easy, and I think pleasant.

MRS. E. E. COLL.

Groveland, Adair Co., Iowa, Jan. 5, 1885.

My friend, I am very glad indeed to get so good a report; but why in the world didn't you tell us how much honey you got in 1884, as the proceeds of that half-pound of bees and queen?—Over 200 lbs. of comb honey from a colony is a pretty good report for any

locality, and I think a good deal of the credit is due to the kind of management you describe in the above.

A GOOD REPORT FROM MICHIGAN.

I commenced with 55 stands; increased to 63; obtained 2500 lbs. of very nice white-clover and basswood honey in one-pound sections. The season was poor in this part of Michigan. J. J. ROE.

Buchanan, Mich., Feb. 11, 1885.

REPORT.

We have a very severe winter. The thermometer is playing between zero and 20 below. On the 3d of February the bees had a good flight; no sign of dysentery then; lest one, which was a late swarm, and a small one at that. I have 50 now, and hope they will pull through all right, for they have plenty of stores yet. They are all on the summer stands, some packed in chaff and forest-leaves, the others protected on top only with leaves in the caps, and I can tell no difference between those packed and those not packed. I will report in the spring, though. J. W. STURWOLD.

Haymond, Ind., Feb. 14, 1885.

FROM 6 TO 16, AND 380 LBS. OF HONEY.

I started bee-keeping last April, with six stands of bees that I bought of a neighbor. I also got one of your A B C books; found it a great help to me, as I had never handled bees before. I got along very well until one night in the first part of June, when some mischievous boys carried one of the best stands about thirty rods away from the apiary, and destroyed the bees, so it reduced me down to five. They increased to 13 stands by natural swarming, and gave me 380 lbs. of extracted honey. I have sold almost all of it for 13 cents per lb.; took them in on the 24th of Nov., all in fine order up to date. This is a rather small report, but I will try to improve from it in the future. E. A. FLIGG.

Oxmead, Can., Jan. 27, 1885.

FROM 50 TO 88, AND 5000 LBS. OF HONEY.

As others are sending in their reports for the past season, I will send mine. I started in last spring with 50 good colonies. They commenced swarming the 10th of June; swarmed rather too much, but I doubled up so that in the fall I had but 38 increase. I have taken off 3000 lbs. of honey in 1-lb. sections, which I sold for from 12½ to 15 cts. per lb. I have 70 colonies in the cellar, 18 in a pit, the first that I ever buried. We have a regular Wisconsin winter—cold, but not changeable. As you know, I got a 100, mill from you that works finely. I am fixed to make my own hives for this season; will do it all by horse-power. I expect you will have to furnish me with sections, at least for this year. My report is not large, but keeps me out of Reports Discouraging. JOHN CLINE.

Fayette, Wis., Feb. 8, 1885.

FROM ONE TO 17, AND 15 LBS. OF HONEY (AND MORE TOO), IN TWO YEARS.

Having noticed in GLEANINGS that your A B C scholars have pretty generally reported to you of their success or failure in regard to bee culture, and as I belong to the A B C class, I will send you my report. Although past fifty, yet quite young in bee culture, and have much to learn, yet I feel well satisfied with my experience thus far, and take great pleasure in taking care of my little friends, the bees, and desire to return my sincere

thanks to you for the plain and practical instruction given in your A B C book, as I knew but very little about bees or the management of them when I began one year ago last spring with one colony of Italians bought of D. E. L'Hommedieu & Bro., of Colo., Iowa, to whom I also feel thankful for some valuable information, and for recommending to me GLEANINGS and your A B C book.

I increased from that one to six, by natural swarming and dividing; the first season I wintered in the cellar, and lost two swarms by insufficient ventilation, and the other four were weak last spring, from which I increased to 17 last summer, and got about 75 lbs. of extracted honey and 60 extra Langstroth frames full of comb, mostly filled with honey, and 15 frames partly filled with comb. Last fall I bought four swarms of bees from parties who had intended to brimstone them, and put them on 40 of my extra combs, which contained honey enough to winter them.

I use two-story ten-frame hives, and brood-frames in both stories; as I was running for increase I did not fall feeding, and think they have plenty of stores to winter. I have them in the cellar, and they are all in good condition.

My report is small, as compared with many others; but as I live in a prairie country, mostly newly settled, and no basswood in reach of my bees, and but little clover, it will account in part for my small report.

W. R. HASLET.

Zealand, Iowa, Feb. 10, 1885.

HONEY IN THE FALL.

I send you my report for 1884, not because it is a big one, but to show that it is not best to be blasted too soon. I am a farmer, and so do not pay very much attention to bees. I commenced the spring of 1884 with 8 colonies in Simplicity hives; wintered on summer stands, mostly blacks, with once in a while one with a yellow band. Willow, maple, apple-tree, etc., bloomed well, and I told the bee-keepers I thought we should have a good season. May 29th there came a frost that froze the ground and killed every thing; even the forest-trees looked as if they had been burned over, and it killed the red-clover. White clover began to come up again, when it became so dry that nothing could grow, and so continued till after July 4. When it began to rain, bees had nothing, not a swarm that I know of, although I did not watch them closely, as I thought they would not get enough to winter on, and were not worth saving. They were killing off their drones in June. Not a basswood-blossom; sumac was killed dead.

After the rains came, the second crop of white clover came up, and weeds and flowers began to bloom freely. About the last of July I looked in the best hive, and saw they were making some surplus. I put on a 26-pound crate, and the middle of August it was filled. I kept putting crates on the hives along, although neighbor S., our apiarist, told me it was not much use, as he never got much surplus in August; but the bees worked right straight along till after October 1. Motherwort, catnip, sweet corn, buckwheat, goldenrod, asters, and all kinds of weeds, bloomed freely. The sumac that was killed by the frost came up the second time, and blossomed about one month later than usual, so that bees did the best in August and September here that they have done for years.

From 8 hives I got 300 lbs. of honey in section

boxes, and might just as well have got 100 lbs. more, if I had put on extra boxes, as they got the hives stowed full, and then stopped for want of room. As it was so hot, and they were so cross, I hated to disturb them; and besides, some that I took off first, the moths got into. Can you tell how to keep the moths out of honey, and will it keep over another year and be as good as new honey?

Honey is worth at Waterbury, where they make watches, 23 cts. a pound at wholesale, if you can sell it; but times are dull. I see by GLEANINGS that many bee-keepers raise tons of honey, and it seems that the consumption does not keep pace with the production.

QUEENS REARED NORTH OR SOUTH—IS THERE ANY DIFFERENCE?

Do you think an Italian queen from the South would be as good for our latitude as one from a colder climate?

H. PERRY.

Southbury, Conn., Jan. 15, 1885.

I am very glad to know you were enterprising enough to keep your eyes open, and take care of the honey when it came, even if it did not come until long after old bee-keepers were in the habit of expecting it. One who expects to succeed must keep watch of things, and never give up as long as warm weather lasts.—I do not think that Italian queens raised in the South will prove materially different from those raised in the North, unless, indeed, the process were carried on for several generations. It might be interesting, however, to investigate this subject. Test queens from Canada side by side with those reared in Florida.

FROM 20 TO 27, AND 120 LBS. OF HONEY.

With order, I send you, according to custom, my report for 1884. Spring count, 20 colonies; increased to 27; made 120 lbs. of honey, over one-third comb, in Gray's sections. As cases seem to be the surplus arrangement for 1885, I shall make all my hives for cases.

D. T. WHEELER.

Rhode River, Md., Feb. 2, 1885.

FROM 2 TO 9, AND 250 LBS. OF HONEY.

Last April I bought 2 colonies of hybrids; artificially swarmed some, and some swarmed naturally. I increased to 9; bought 5 colonies of Italians; last summer I got nothing from the five, but from the others, that is, the 2 colonies of hybrids, I got 250 lbs. of comb honey. I have to feed some candy.

Viroqua, Wis., Jan. 8, 1885.

E. Y. CARR.

FROM 100 TO 137, AND 33 BARRELS OF HONEY.

I started in spring of 1884 with 100 fair colonies; extracted, up to August 29, 33 bbls.; have taken none since. Bees are in good condition; have 137 hives with 23 L. frames each, and 40 nuclei, from 3 to 6 frames each. The latter I have to feed. I shipped 16 bbls. honey to C. F. Muth. Net proceeds, \$404.10; 13 to Hewes, Sharp & Co., St. Louis, not sold; 3 to Memphis, @ 7c.; put up 1 bbl. in glass jars, sold @ 12 $\frac{1}{2}$ to 15c. Total, 33 bbls. Wax, I had about 125 lbs. I hope to see you at New Orleans this spring.

Lakeport, Ark., Jan. 12, 1885.

R. J. ADAMS.

FROM 80 TO 114, AND 300 LBS. OF HONEY.

My report for 1884 is not encouraging. Commenced the season with 80 swarms; went into winter quarters with 114 swarms, all in fair condition for winter; took off 300 lbs. of section boxes filled with honey, and 490 extracted. I had a large supply

of boxes, partially filled, owing to drought. Only for a good run on basswood I should not have had much honey. Clover did not yield much honey here this year. I do my bee-work all alone. I was 68 years old the 27th of last Oct. S. PARDEE.

Volga, Iowa, Jan. 8, 1885.

TOBACCO COLUMN.

QUITTING TOBACCO IN THE SPRING TIME, ETC.

IN regard to smoking, I will say that I have not got to pay for the smoker yet. I have weighed 22½ lbs. more in the summer just past than I ever weighed before. My health has been 500 per cent better than ever before, so you see that it has been a benefit to me to let the pipe lie by. The fight for mastery was sharp and severe for a short time; but by the grace of God I was enabled to conquer, and now I am a free man, and I would say, for the benefit of all smokers, that when you make up your mind to quit, do it in the spring of the year, for then the system is undergoing a change, and the change of season from cold to warm will be a great benefit to you, as a little manual labor then will assist you greatly in throwing the vile stuff from your system with the perspiration, as the pores of the skin are open. I know whereof I speak, for I have been there twice in my lifetime—once for chewing, and once for smoking the vile weed. And now, smokers, if you want to know how your breath and clothes are perfumed, leave off the use of tobacco for 6 months; use it in no form in that time, and at the end of the six months, smell of the breath of a confirmed smoker; and if you are not satisfied to let it alone after that, then I am of the opinion that you have lost all sense of decency. I speak from experience and not from observation. A. H. BRAYMAN.

Waldo, Wis., Dec. 26, 1884.

MIDNIGHT MUSINGS.

It is nine o'clock of the last night of the year, and memory, in her backward flight, dwells on nine o'clock just four years ago, when I emptied, simultaneously, my mouth and pocket of tobacco, and resolved, by God's help and the prayer of friends, never to use it again. How far I have succeeded, you may decide when I tell you I have tasted the weed but once, and that occurred wholly from force of habit. I was receiving for money in one of our drug-stores, when the editor of our town paper walked in for a smoke. At the instant of writing I was asked by him to take a cigar, which, without thinking, I did, and was soon puffing away with all the vigor of bygone days. I believe that smoke made me sicker than the first of my using. I hope to meet you at the Exposition in New Orleans, and many other faces who, from paper association, are almost already known to me. W. F. ROBERTS.

Clinton, La., Dec. 31, 1884.

WHAT A YOUNG MAN THINKS ABOUT TOBACCO.

Mr. Root:—I must write and tell you how much good your Home Papers are doing me as well as others. I read them to two old people that are so situated they can not attend meeting on Sunday. They say a man who can write such good sermons must be a Christian. You don't begin to know what good you are doing through the publication of Our Homes. Go on with the good work, for great must be your reward in heaven.

I must also say a word of encouragement to you about tobacco. I am pleased to think such a man as you are so discourages the use of it, both by example and precept. There are men I know, ministers of the gospel too, who use it, who don't seem to think they are doing much harm either. I should say, if I should say as I thought, that such men had either better give up the use of the filthy weed, or stop preaching. It seems to me that ministers who chew and smoke do more harm by the example they set before others, than good by preaching. Often have I heard men talk about using tobacco who would say such a man uses it, and he is a minister. Don't you see the point, Mr. Root? Perhaps there are young men in almost every neighborhood who think they can't be gentlemen unless they have a cigar stuck in their mouth, if I may use the expression. I am 24 years old, and have never used it in any form. If all I lack is a cigar to make me a gentleman, I never will become one. I might say a great deal more about the evil resulting from the use of tobacco, but I fear I have already wearied your patience by writing you so lengthy an article.

Eddyville, N. Y., Jan. 12, 1885. B. H. BRADLEY.

I have quit smoking. I have used tobacco for 8 years. Now if I am entitled to a smoker, please send me one; and if I ever use it again I will pay you for the smoker. I have 11 colonies of bees; it was not a very good season for bees here. They made a little honey. C. W. BACON.

So. Hamilton, N. Y., Dec. 8, 1884.

ANOTHER FREEMAN.

I smoked tobacco for the last time about a year ago. Now if you please I would like a smoker. We have 3 hives of bees. If I begin smoking again I will pay you for the cost of the smoker.

Collamer, Ohio, Nov. 2, 1884. G. F. CLEVELAND.

CIRCULARS RECEIVED.

C. V. Gross, Pullman Ill., sends us a 4 page list of hives and poultry.

E. T. Lewis & Co., Toledo, O., send out a 10-page list of honey-extractors.

B. F. Carroll, Dresden, Texas, sends us a 4-page list of bees, supplies, etc.

W. S. Cauthen, Pleasant Hill, S. C., sends us his 8-page list of bees, queens, etc.

W. H. Proctor, Fair Haven, Vt., sends out a 4-page price list of bees and queens.

E. M. Hayhurst, Kansas City, Mo., sends us a postal price list of queens and bees.

J. E. Shaver, North River, Va., sends us a one-page list of bee-keepers' supplies.

S. P. Roddy, Mechanicstown, Md., sends us a 4-page list of colonies and nuclei.

A. B. Howe, Council Bluffs, Iowa, sends out a 20-page list of hives, foundation, etc.

J. A. Humason, Vienna, O., issues a neat 4-page price list of chaff and Simplicity hives.

C. W. Costellow, Waterborough, Me., sends us a supplemental price list of hives, etc., for 1885.

F. A. Snell, Millersville, Ill., sends us his price list for 1885. Friend S. makes the Eclipse hive.

J. W. Eckman, Richmond, Texas, sends us a 4-page list of queens and bees. No supplies for sale.

G. F. Williams, New Philadelphia, O., sends out a one-page list of bees, hives, honey, poultry, etc.

S. Valentine & Son, Hagerstown, Md., issue a 20-page list of queens, hives, etc. Albino a specialty.

The American Manufacturing Co., New Carlisle, O., send us a 16-page list of bee-keepers' supplies, bees, queens, etc.

E. Y. Perkins, Jefferson, Ia., has just ordered from our job-rooms a 12-page list of apiarian supplies, bees, and queens.

J. B. La Montagne, Montreal, Canada, sends a very nice 4-page list of all kinds of apiarian supplies. It is printed in the French language.

We have just printed for A. H. Duff, Creighton, O., a 16-page list of apiarian supplies and have several now on hand to print, which we will mention in our next.

D. S. Given & Co., Hoopeston, Illinois, send us a 16-page catalogue relative to the Given foundation-press. Since the death of friend G. his wife has given her personal attention to his affairs.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT.

EDITOR AND PUBLISHER.

MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, MAR. 1, 1885.

And I say unto you, my friends, Be not afraid of them that kill the body, and after that have no more that they can do.
LUKE 12:4.

AFTER laboring hard for two weeks to make myself "useless" among the young people here, Ernest and I start this morning, Feb. 23, for a 12-days' absence at New Orleans.

A CORRECTION.

In neighbor H.'s article on sweet clover, on page 163, he states that it is a *perennial*; the rest of the sentence, however, will show that he meant to say it is a *biennial*.

FIRE.

WE are pained to learn the following from friends Bingham & Hetherington:

We lost our smoker-shop by fire, Monday morning, Feb. 9, 1885, and all its contents. Loss from \$1500 to \$1800, \$400 insurance. In this loss is a lot of knives for our early trade. We are entirely out of knives now, but have a lot making, which will be rushed forward to meet the orders. B. & H.

DISCOUNTS FOR THE FORE PART OF MARCH.

As orders still hold back, and as we are very anxious indeed to get business now, rather than be obliged to run nights a little later, we extend the discount on foundation-mills, foundation, and sections, of 10 per cent until March 15. Sections will also be furnished for \$4.00 per 1000 until the above date, in ten-thousand lots. No discount on this latter offer.

THE A B C OF CARP CULTURE.

THE above is the title of a new book mentioned in last month's editorial; and by the way, friends, if any of you have any special questions you would like answered in regard to it, mail them at once to Milton P. Peirce, 323 Walnut Street, Philadelphia; and if it is something he has not already considered in the work, he will touch upon it, if important.

SECTIONS DOVETAILED ALL AROUND.

WE have so much improved our machinery for making these, that we can make them of basswood at the same prices as the one-piece sections. If made of the white poplar, however, the price is \$1.00 per 1000 extra. One reason why we can furnish these cheaper is, that the new machine uses up all the odds and ends—every piece that is large enough to make a section-blank.

SENDING LETTERS IN PACKAGES OF MERCHANDISE.

ALTHOUGH editors have taken up this subject over and over again, there seem to be a great many people who either do not understand or will not understand that letters must be sent by themselves, and paid for at the rate of letter postage. To-day a small bee-hive containing a model of a reversible-frame device came with a long letter in it, and the

package was so badly tied up that it burst open before it reached us, and so Uncle Sam got hold of our offending friend. If the law should be enforced, it is something like five or ten dollars' fine. Will our reversible-frame friends, as well as all others, please take notice?

PREPARING WAX SHEETS READY FOR ROLLING.

A FRIEND writes us that he has made the great discovery, that if sheets of wax are kept in a tank of warm water, and taken out just as they are put through the mill, they will go through with very little or no starch at all on the rolls. Now, to tell the truth, this is the way we have worked for years past, and we have oblong tin pans made just right to hold a pile of sheets. But come to look at our A B C book, and directions for using the foundation-mill, I can not find that I have ever mentioned it in print. In making foundation during cold weather, this vat, or pan of hot water, is almost a necessity.

OUR 15-CENT STRAWBERRY-BOOK.

WE tried to get it so it would go in our ten-cent library, but could not quite make it. It is the well-known "Strawberry Culturist," by Andrew S. Fuller, and I do not believe there is a better writer on small fruits in general. The book contains 48 pages and 11 illustrations. Price 15 cts.; by mail, 2 cts. more. We make the following extract:

One gentleman in this city, who has no room for a strawberry bed, in fact, he has no garden, nothing but a small yard, which is paved, and upon which the sun shines only a part of the day, yet grows many quarts of fine strawberries every year. His mode is to get plants that have been potted in the fall and all ready for fruiting; these he places upon the sunny side of the pavement in the morning, and moves them in the afternoon upon the other side, leaving them placed upon a platform that is easily and readily moved. The watering and moving are attended to by the children, and by their constant watchfulness and care they learn to love and admire the plants, and when the fruit ripens, each specimen is looked upon as the fruit of their labor, and more highly prized than if bought from the market. Each plant usually gave one quart of fine fruit. I mention this merely to show under what difficult circumstances this beautiful fruit may be grown.

SEEDS FOR THE YEAR 1885.

ALTHOUGH seedsmen are getting to be pretty careful in testing seeds before sending them out, the country-store dealers, and perhaps others, may not be equally careful; that is, if they do not sell out one year, the same seeds may be brought out and offered for sale hereafter. There is a reason for doing this, because many seeds grow as well when three or four years old as when freshly gathered, and it is claimed that some seeds are even better for having age. I believe most of us, however, would prefer to take our chances on seeds carefully raised only a year before. Landreth Sons, of Philadelphia, have made a move in the right direction, by what they call their "cremating" process, and any dealer who purchases seeds of them, and happens to get more than his trade requires, can have the whole lot replaced by fresh seeds by sending a statement, properly witnessed, to the Landreths, that their old seeds have all been burned up, according to orders. Of course, pease, beans, corn, etc., are good to cook or feed to chickens, so we do not need to burn them up. But I do believe, friends, we had better get over the idea of using seed more than a year old, if it can possibly be avoided. If you can not furnish any other, tell your customers so, and make your price according, and then let him take the chances if he chooses. We are just taking measures to put this in practice with our seeds for honey-plants, and every package put up is to have the date, when the seeds were raised, printed on the wrapper.

ADULTERATING HONEY.

I AM quite sure that at least some of the friends are a little too ready to "think evil" in this matter. Some little time ago a very nice specimen of bass-wood honey was sent us, saying a man had been peddling it around, and they were all sure it was adulterated. It was candied white and solid, and of a beautiful flavor. To-day a sample of very fine California white-sage honey comes with a note, inquiring if it is spurious. Very likely the friend who sent it thought something was wrong because it would not candy during our zero weather. The real white-sage honey never candies, even if it gets so cold you have to cut it with a knife. May be the low price at which it is now furnished had also something to do with it. Good nice honey is now sold so low that it will hardly pay to go into the business of making bogus honey.

OUR NEW HYDROMETER, AND THE SPECIFIC GRAVITY OF DIFFERENT KINDS OF HONEY.

I WAS a little surprised the other day, to find that our California honey that is so very thick, and never candies, did not show as great a specific gravity by the hydrometer as our common white-clover honey that is not as thick as the other. It is quite natural to presume that the thicker honey is, the heavier it will be for a certain quantity; but it seems the sage honey has something about it that makes it thick so it runs slowly, without being as heavy as the clover honey; that is, a quart of clover honey weighs more than a quart of California honey, and yet the clover honey pours the easier, both being at the same temperature. The hydrometer sinks to 44 degrees in the clover honey, but to only 43 degrees in the other, and the latter is so thick that, at a temperature of 60 degrees, it takes quite a spell for the hydrometer to get settled.

LARGE PRICES FOR NOVELTIES IN THE WAY OF SEEDS, PLANTS, ETC.

MANY of the agricultural papers have taken up the matter of the continual increase of varieties in seeds and plants, and have commented on the sad fact that many of the novelties are only old things brought up under a new name. The managers of the Experimental Grounds at Columbus, Ohio, have published the results of their test on strawberries; and after making due allowance for differences in soil, etc., the lamentable fact still remains, that a good deal of the blow and puff, accompanied with gorgeous pictures, is only for the purpose of getting people to invest at large prices. Prof. Lazenby has just sent us a report in regard to 28 varieties of strawberries. Only 6 of the 28 are reported worthy of attention. "Big Bob" is summed up briefly, "Unsatisfactory in every way."

Then, again, think of the monopoly on new seeds, new potatoes, and new plants, charging 50 cents for a very few seeds of some improved cauliflower, and half as much for a new sort of celery, etc.! One who by years of pains works out an improvement, ought to have his pay; but, where is there any need for so much pay? A great many of us would like a few plants to test these novelties, but we can not afford to pay 50 cents.

At the time the breeze started up for seeds of spider plant and figwort, there was a chance for making quite a little sum of money by putting them up in high-priced packages, especially for seeds improved by cultivation. But we have, as you know, always furnished seeds of bee-plants, in

five-cent papers. When the article is new and scarce, only a few seeds have been furnished—sometimes, perhaps, not over half a dozen. But half a dozen is, many times, as many as those with small grounds care for. If they want more, of course they can get a larger quantity than a five-cent paper.

Now, I have had for some time a project of furnishing novelties in the way of garden seeds at 5 cents a paper, giving very few seeds where the variety is scarce, and high in price. I think we can manage to put up potatoes in five-cent packages, without trouble; but when it comes to raspberries, strawberries, grapes, etc., it might not be so easy to manage. It would hardly be advisable to sell one plant, because if it should die our customer would be "out," and I never want anybody to pay me money for any thing that does him no sort of good, if it can be possibly avoided. Now, in regard to the five-cent papers, even though cauliflower and celery seed should cost \$5.00 an ounce, I think an ounce can be divided into 100 parts, and then give a customer enough to test the variety. Of course, I should not do anything of this kind in an underhanded way. Henderson's Early Snowball cauliflower is now worth \$5.00 per ounce, or 50 cents for a very small package. White-plume celery is worth just half as much. The seeds are so small that the one-hundredth part of an ounce would answer very well for small seed-growers.

We propose to issue a small catalogue of seeds at 5 cents per packet, in a few days, including seeds of honey-plants as well, and the list we have for years been selling for gardening and horticulture. After having tested the seeds on our grounds, we shall offer for sale as many varieties as we think are worthy of notice by the average gardener of small means; and if you want forty or fifty varieties of pease, beans, and tomatoes, you can find them in the regular seed catalogues—never in ours, I hope.

We have to-day, Feb. 26, 6311 subscribers, or 221 more than last month. Many thanks, dear friends for your kind support.

NOTES AND QUERIES.

GAURA BIENNIS.

THE new honey-plant, *Gaura biennis*, is plentiful in this part of Iowa. It is a weed of recent introduction, having made its first appearance along the railroad eight or nine years ago. It does not thrive on the uplands, but grows to a height of from four to six ft. on the rich alluvial bottom-lands. In the morning a drop of nectar as large as a pinhead may be found in every flower; but by ten o'clock it is evaporated by the heat of the sun. The bees apparently care but little for it, evidently greatly preferring the golden-rod that blossoms at the same time. Farmers need have no fear of the *Gaura*, as it is easily exterminated. Plentiful as it is here, I have never seen a stalk of it in a cultivated field. Z. T. HAWK.

Denison, Crawford Co., Iowa, Feb. 7, 1885.

HOW TO MAKE A FILTER IN A CISTERN.

I have seen a good deal in GLEANINGS lately on how to filter a cistern. I will tell how my filter is made. It is of brick, built in the cistern, laid up with good water-lime cement, just as you would

build a chimney, only smaller. It is 9 by 9 inches inside, and is a little higher than the cistern. The water is all around the chimney, or filter.

The pipe is put down in the filter, and the water filters through the brick. It costs but little. There is no need of coarse gravel or charcoal or iron filings or sponges. It may be asked, "Will the water filter through the brick as fast as needed?" Yes, faster than a cistern pump will draw it.

Dryden, N. Y., Dec. 25, 1884. JOHN McKEEN.

COPYING THE INVENTIONS OF OTHERS, WITHOUT THEIR PERMISSION; LOTTERIES, ETC.

Dear Mr. Editor:—I wish to commend what you say about inventions. We should respect them, whether patented or not. Mr. Heddon has given us a valuable improvement in his honey-board and double bee-space. He should have the control of it. I like, too, what you say as to lotteries. Something for nothing is the bane of the age; it is unrighteous, and no less unpatriotic to stimulate it. A. J. COOK.

Lansing, Mich., Feb. 10, 1885.

FROM 16 TO 26, AND ONLY 51 LBS. OF HONEY.

I started last spring with 16 colonies; increased to 26; this has not been a good season for bees. When the white clover bloomed I thought it would be a good season for honey, as the fields and roadside were literally white with blossoms. From all of my bees I got only fifty pounds honey, poor yield; will try again.

W. D. ANGELL.

Odell, Ill., Dec. 4, 1884.

A CORRECTION IN THE ISSUE OF JANUARY 15.

I see in my report a mistake in GLEANINGS, Jan. 15, page 49, where it reads, "I am now of the opinion that it would have been cheaper to have bought foundation." In the place of the word "foundation," it should read, "to have bought a *machine* from you."

W. D. THARP.

Williamsburgh, N. C., Jan. 28, 1885.

BEES BY THE POUND.

From April 20 to May 20, \$1.00. Dollar queens to go with bees as above, \$1.00 each. After May 20, bees by the pound, 80 cents. 2 frame nuclei, with dollar queen, each \$2.00; 3-frame nuclei, with dollar queen, each \$2.50; 9-frame in Simplicity body, with dollar queen, each, \$5.00. All wired combs. Wishing to go West, I will sell 200 colonies, after May 20, very cheap. Write for prices, stating what is wanted. Edn., heavy, 45c. Light, 55c. Cut as desired. Wax worked at 10 cts. per lb. G. W. GATES, Bartlett, Shelby Co., Tenn.

WANTED AT ONCE.

I will pay \$20 to \$30 and board per month for a man who is thorough in handling bees for comb honey, to work in garden and apiary. In answering, write fully who you are, and what you can and will do. Give reference. None but a reliable worker need apply. I shall answer any person I may select from his reply to this, by telegraph; so do not write unless you mean to come at once.

5d R. J. ADAMS, Lakeport, Chicot Co., Ark.

GIVEN FOUNDATION. Wax worked for a share, or by the pound. Foundation and bees for sale. H. D. BURRELL, Bangor, Van Buren Co., Mich.

WHO WILL BUY? WHO?

80 COLONIES OF ITALIAN BEES for sale by the colony or pound. Simplicity Hives, Frames, Langstroth, 91, 17, 13. Wired frames, combs built from foundation, and are all worker-cells, and straight as boards. The finest lot of bees in the market. Queens and Given foundation for sale. Send for Circular.

5d-6d

T. H. KLOCK,

Terre Haute, Vigo Co., Ind.

HEADQUARTERS IN THE SOUTH

FOR THE MANUFACTURE AND SALE OF

BEE-KEEPERS' SUPPLIES

The Only Steam Factory Erected in the South, Exclusively for the Manufacture of Hives, Frames, Sections, Etc.

Viallon, and Root Simplicity Hives, Comb Foundation, Extractors, Smokers, etc. Italian Queens and early four-frame nuclei a specialty. Full colonies in any quantity. For more particulars, and prices, send for my Descriptive Illustrated Catalogue. Also see ad. in February 1 number.

Cash market price for wax.

P. L. VIALLON,
Bayou Goula, Iberville Parish, La.

FOR SALE.

As early as wanted in the spring, a large number of swarms of

ITALIAN AND HYBRID BEES.

BEES AND QUEENS in their season cheap. After July 1st, almost given away. Address

5d A. W. CHENEY, Kanawha Falls, W. Va.

For Sale!

Dark leather-colored or light Italian bees and queens. Manufacturer of comb foundation. Cash for Beeswax. Send for Price List, free.

E. PETERMAN,

5-7-9-11-13-15d Waldo, Sheboygan Co., Wis.

ITALIAN BEES.

Dollar Queens and Nucleus Swarms specialties, from June 1, to Oct. 1. 500 customers say my strain of Italians surpass every thing. Foundation from clean yellow wax furnished as low as it can be made. Send for Circular to

5-7-9-11-13-15d

W. H. PROCTOR, Fairhaven, Vt.

LOOK HERE!

TEXAS MOCKING-BIRDS, &c

→ TEXAS RED BIRDS, &c

→ ITALIAN QUEENS,

For sale at reasonable prices. Address

5-6d

W. D. BALL, Columbia City, Whitley Co., Ind.

ROOT'S CHAFF HIVES

Still lead, and we furnish them at

Hand-Pan Prices.

Our 5th Annual Circular, containing a full line of Bee Keepers' goods, will be sent free on application.

5d-6d C. C. & F. P. WATTS, MURRAY, CHICAGO, ILL., PA.

EGGS FOR HATCHING.

From Choice Brown Leghorns, S. C., \$1.00 for 15; 3 settings, \$2.50. 75 eggs, \$4.00.

5d-6d

R. J. NASH, Williamson, Wayne Co., N. Y.

Stanley's Automatic Honey-Extractor,

FOR \$12.00 AND UPWARDS.

The only honey-extractor that will reverse the combs by the motion of the machine. Made to fit any size and number of combs, and to extract from partly filled sections. Also Stanley's dollar Smoker, a large 3-inch-barrel smoker, for only \$1.00, or \$1.25 by mail. Write for circular giving full particulars.

Address

G. W. STANLEY & BRO.,

5d

Wyoming, N. Y.

MISSOURI.

THE ONLY MANUFACTURERS IN MISSOURI, of Apianian Implements. Send for Circular and Price List of our Hive with the **Reversible** Surplus arrangement for comb honey. Also **Smokers, Comb Foundation, Italian Queens, etc.** **KENNEDY & LEAHY,**
P. O. Box 11. HIGGINSVILLE, Lafayette Co., Mo.

5tfdb

Colonies, Nuclei, and Queens, 1885
FOR SALE.

For terms, address 4-5-7-9d

S. D. McLEAN, COLUMBIA, MAURY CO., TENNESSEE. 1885

IMPORTED CARNIOLANS.

Grades and Prices of Queens: Spring June 3 & 4 Fall
Finest Selected Queens, each: 5 00 6 00 5 00 4 00
Fine Profile 6 00 5 00 4 00 3 00
Reared in Carniola. Safe arrival by mail guaranteed. Same prices for imported Italians. For circular, address MRS. FRANK BENTON, ANGELICA, N. Y. Send greenbacks registered, draft, or postal-order to FRANK BENTON, MUNICH, GERMANY. 3tfdb

FOR SALE!

CHOICE SEED CLOVER AND POTATOES.

By Freight or Express.

	bus' 1	peck	lb.	mail lb.
Alsike Clover.....	\$10 00	\$2 75	20c	40c
White Clover.....	10 00	3 00	20c	40c
Hall's early peachblow potatoes.....	1 25	50	15c	35c
Ontario.....	1 25	50	15c	35c

Address

E. S. HILDEMAN,
Ashippun, Dodge Co., Wis.

Please mention this Journal if asked for the above advertisement. 2tfdb

Foundation Machines, L. size, \$3.75.

Italian Bees, Queens, and Honey, a specialty. See new circular.

3tfdb OLIVER FOSTER, MT. VERNON, LINN CO., IOWA.

VANDERVORT
COMB FOUNDATION MILLS.

Send for samples and reduced price list.

tfdb JNO. VANDERVORT, Laceyville, Pa.

DADANT'S FOUNDATION FACTORY. WHOLESALE and RETAIL.
See advertisement in another column. 3tfdb

IF YOU WANT

A GOOD ONE-PIECE SECTION **CHEAP.**

Send to us. Sample and Price List Free.

SMITH & SMITH, KENTON, HARDIN CO., OHIO. 2tfdb

BUCK & SWALLOW,

Manufacturers of and Dealers in

APIARIAN SUPPLIES,
AND BREEDERS OF ITALIAN QUEENS.

Send for Price List.

2816 Missouri Avenue, St. Louis, Missouri. 3-5d

BLUEBERRY. A valuable Fruit, succeeds fruit to grow for market. Two dozen plants by mail, \$1. Descriptive price list free.

DELOS STAPLES, West Sebawa, Ionia Co., Mich.

3-8db

The All-Purpose Hive, with

REVERSIBLE CRATE,

With or without a bee-space. White poplar nailed sections. Given foundation, etc. Wax worked at 10 and 12 cts. per lb. English Habbits. Send for price list to

GEO. F. WILLIAMS,

3-8db

New Philadelphia, O.

A Splendid Offer.

To all those who will send us at once their subscription to the

American Apiculturist,

For one year (1.00) and \$1.00 extra, or \$2.00 in all, we guarantee to send a choice Italian queen worth \$1.50. These queens are bred for us by a careful and reliable queen-breeder. We also give away to all those who will send us their address, plainly written, an interesting and valuable little pamphlet, the "Bee-Keeper's Companion." Send us your address at once. Address

5-6-7-8d

SILAS M. LOCKE, Salem, Mass.

FRUIT, SHADE, AND HONEY.

Bee-keepers, please see my advertisement in GLEANINGS for Nov. 15, 1884, page 700, and order at once. Two dozen for \$1.00, postpaid. Address

4tfdb

JNO. W. MARTIN, GREENWOOD DEPOT, VA.

Dunham & Vandervort Foundation

We have bought a large stock of choice yellow beeswax, and can furnish Dunham comb fdn. for brood comb, cut to any size, for 50c per lb.: thin and bright yellow fdn., for sections, at 55c per lb. Extra thin Vandervort fdn., 10 to 12 sq. feet to the lb., for 61c per lb. We guarantee our fdn. to be made of pure beeswax, and not to sag. Will work up wax for 10c per lb. for brood, and 15 and 20c per lb. for sections. To induce our customers to order fdn. early in season, we will allow 10 per cent discount, on all orders received before the first of May.

F. W. HOLMES,

5tfdb

Coopersville, Ottawa Co., Mich.

1885 ITALIAN QUEENS 1885

Untested Queens in March and April..... \$1 25
Afterward..... 1 00

J. S. TABLOCK,

5tfdb

LULING, CALDWELL CO., TEXAS.

JOB LOT OF WIRE CLOTH

AT GREATLY REDUCED PRICES.

Such a brisk demand has sprung up for this, and our customers seem to be so much pleased with the goods, we have succeeded in getting another still larger lot, of one of the largest manufacturers of wire cloth in the world. Please bear in mind that the only way in which we can afford to sell it at the very low price of 1 1/2 cts. per sq. ft. is by selling the entire remnant just as it is put up. We have now in stock the following pieces. As fast as it is sold, each piece is crossed out, and the next issue will show what remains.

Width, 8 inches.—3 rolls containing respectively 60, 50, and 60 square feet.

Width 10 inches.—4 rolls, containing respectively 72, 70, 65, and 75 square feet.

Width, 11 inches.—One roll, containing 80 square feet.

Width 12 inches.—2 rolls, containing respectively, 90 and 100 square feet.

Width, 14 inches.—1 roll, containing 80 square feet.

Width, 16 inches.—1 roll containing 130 square feet.

Width, 20 inches.—1 roll, containing 150 square feet.

Width, 25 inches.—2 rolls, containing respectively, 250, and 180 square feet.

Width, 24 inches.—2 rolls, containing respectively, 20 and 30 square feet.

Width, 25 inches.—3 rolls, containing respectively, 53, 142, and 250 square feet.

Width, 26 inches.—7 rolls, containing respectively, 215, 200, 210, 216, 200, 215, and 216 square feet.

Width, 27 inches.—One roll, containing 23 square feet.

Width, 28 inches.—8 rolls, containing respectively, 116, 200, 115, 40, 230, 230, 190, and 364 square feet.

Width, 30 inches.—2 rolls, containing each 25 and 200 sq. ft.

Width, 36 inches.—2 rolls, containing respectively, 270 and 120 square feet.

Width, 38 inches.—4 rolls, containing respectively, 316, 300, 290, and 316 square feet.

Width, 40 inches.—3 rolls, containing respectively, 330, 166, and 150 square feet.

Width, 42 inches.—One roll, containing 245 square feet.

A. I. ROOT, MEDINA, OHIO.

BE SURE

To send a postal card for our illustrated catalogue of **APIARIAN** Before purchasing **SUPPLIES** elsewhere. It contains illustrations and descriptions of every thing new and desirable in an apiary.

AT THE LOWEST PRICES.

ITALIAN QUEENS AND BEES.

J. C. SAYLES,

1-12db **Hartford, Washington Co., Wis.**

BEE-KEEPERS' SUPPLIES

MANUFACTURERS OF

ONE-PIECE SECTIONS,

Made from Basswood.

HIVES OF ALL KINDS,

FOUNDATION, SMOKERS, ETC.

Send for Price List to 23tfd

Smith & Goodell, Successors to Derr & Harris.
ROCK FALLS, WHITESIDE CO., ILL.

EARLY QUEENS. If you wish to buy Italian Queens and Simplicity Hives early, send for my new Price List. 4-5-6-7d.
W. S. CAUTHEN, Pleasant Hill, S. C.

20 HIVES OF HYBRID,

AND 55 HIVES OF BLACK BEES,

All in new Langstroth hives, will be ready for shipment by May 1st. Send for price list. Send all orders to **G. W. ALBRECHT,**
3-8db **Dundas, Calumet Co., Wisconsin.**

Established 1855.

HEADQUARTERS BEESWAX

We have constantly on hand a large stock of Domestic, Imported, and Refined Beeswax in original shape, which we offer to manufacturers of Comb Foundation at lowest prices. Write to us for prices, stating quantity wanted. Address

R. ECKERMANN & WILL.

Beeswax Bleachers & Refiners, SYRACUSE, N. Y.
N. B.—We have low freight rates to all points on quantities. 24-11db 3tfd

SECTIONS.

To nail, or dovetailed, 4½x4½, per 1000 \$4 50
Other sizes, larger, to 5x8 5 00
Send for price list and sample.

PARKER NEWTON,

EARLVILLE, - MADISON CO., - N. Y.
2-3-4-5-6d

W. Z. HUTCHINSON,
ROGERSVILLE, GENESEE CO., MICH.,

Can furnish just as neat, white, smooth, and perfect dovetailed white-poplar sections as there are made. Send for sample and prices. 3tfd

100 Colonies of Italian Bees,
AND 100 TESTED ITALIAN QUEENS, FOR SALE.

For particulars and prices address

W. H. HOBSON, M. D.,
Irving, Montgomery Co., Illinois.

3-5d

Bee-Hives AND Sections!

NEW SHOP AND NEW MACHINERY.

The Largest Manufactory of Bee-Hives, Sections, etc., in the World.

Our Capacity now is a Carload of Goods Daily.

DECIDED.

The courts have decided the patent on the One-Piece Section to be null and void, for want of novelty. We are now manufacturing them again as first placed on the market by Lewis & Parks.
Write for our new price list for 1885.

G. B. LEWIS & CO.,

19tfd **WATERTOWN, WISCONSIN.**

FOR SALE.

A 1½ H. P. wrought-iron tubular boiler and engine, in working order. Price on cars, \$115.00.
1-4db Address **J. D. ENAS, Napa, Cal.**

DADANT'S FOUNDATION FACTORY.—WHOLESALE AND RETAIL. See advertisement in another column.

Bee-Hives and Supplies.

We have remodeled our machinery, and can fill orders on short notice. If wanted, odd sizes made. Send orders now before the rush comes. We have a large stock on hand now. We give 3 per cent discount till Feb. 1. Price list free.

B. J. MILLER & CO.,

2-12d **Nappanee, Elkhart Co., Ind.**

REVERSIBLE-FRAME HIVES.

WHITE BASSWOOD AND POPLAR SECTIONS.

Send for Circular.

O. J. HETHERINGTON, EAST CAGINAW, MICHIGAN.
3-5-7d

IMPORTED QUEENS.

In April,	11 frames in gold.
May and June,	10 " " "
July and August,	9 " " "
September and October,	7 " " "

No order received for less than 8 queens. Queens which die in transit will be replaced only if sent back in a letter. **CHARLES BLANCONINI & CO.,**
3-13d **Bologna, Italy.**

NOW READY! NOW READY!!

500 U. S. STANDARD HONEY-EXTRACTORS,

1000 TOLEDO SMOKERS,

Both of which took the first premium at Ohio, Indiana and Michigan Tri-State Fair in Sept., 1884. We also manufacture and deal in a full line of Apiarian Supplies. Send address for circular.

E. T. LEWIS & CO., Toledo, Lucas Co., O.

1885 **ITALIAN QUEENS.** 1885

6 WARRANTED QUEENS FOR \$5.00.

Write for Circular.

11tfd

J. T. WILSON,
NICHOLASVILLE, KY.

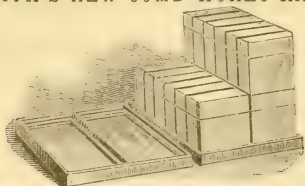
FLAT-BOTTOM COMB FOUNDATION.

High side-walls, 4 to 14 square feet to the pound. Circular and samples free.

J. VAN DEUSEN & SONS,
4tfd **Sole Manufacturers,**
SPROUT BROOK, MONT. CO., N. Y.



SMITH'S NEW COMB-HONEY RACK.



Sample by mail, already nailed, 16 cents. Racks alone by freight, nailed, per quantity, 10c per rack. Send for circular and full price list. Address
3-4-5d JOHN T. SMITH, BELLEVUE, EATON CO., MICH.

ALL DOVETAILED SECTIONS,

LANGSTROTH AND BROOD AND WIDE
CHAFF HIVES. FRAMES,
SHIPPING - CRATES, WIRE NAILS, ETC., ETC.

Send for Circular.

3EO. WHEELER, NORWICH, CHEMANGO CO., N. Y.
2-3-4td

GEO. W. PUTNAM,

HOLLAND, GRUNDY COUNTY, IOWA.

Wishes to say that he will put up in packages, for one dollar, the following seeds for bee-keepers:

1 peck of Silverhull Buckwheat.....	35c
3 pounds Rape seed.....	40c
1 packet, 1/2 oz., Spider plant.....	10c
1 packet, 1/2 oz., Simpson plant.....	10c
Suck.....	5c

Will also sell or trade my house and two lots, blacksmith and wagon shop, with a good custom. Send postal card for price list of supplies, etc. 4-5d

MUTH'S

HONEY-EXTRACTOR,

SQUARE GLASS HONEY-JARS,

TIN BUCKETS, BEE-HIVES,

HONEY-SECTIONS, &c., &c.

Apply to CHAS. F. MUTH, CINCINNATI, O.
P. S.—Send 10-cent stamp for "Practical Hints to
Bee-Keepers." 1td



BOOKING + ORDERS.

Why not buy your Queens and Bees direct from the breeder? 25 cents saved is 25 cents made. I am now booking orders for Queens and Bees, to be delivered in April, May, and June. Send for my new Price List. Address 4-5-6-7d.

W. S. CAUTHEN,

PLEASANT HILL, LANCASTER COUNTY, SOUTH CAROLINA.

Basswood-Trees.

Basswood-trees 1 to 3 feet high, - - \$1.50 per 100
Hard-maple trees, 3 to 5 feet high, - - 1.50 per 100
Mountain-ash, ornamental, 3 to 5 feet, 10 cts. apiece.

Address HENRY WORTH,
1td Borodino, Onondaga Co., N. Y.

PURE ITALIAN BEES.

FULL COLONIES, NUCLEI,

QUEENS A SPECIALTY

If you intend buying bees or queens this season, send for my circular and price list. You will save money by so doing.

3td-5b C. C. VAUGHN, Columbia, Tenn.

BEE-HIVES,
ONE-PIECE SECTIONS,
COMB FOUNDATION,

Bee - Keepers' Supplies Generally.

Price List Sent Free.

J. J. HURLBERT,
1-11 1mo Lyndon, Whiteside Co., Ill.

HEDDON'S

32-PAGE

CIRCULAR FOR 1885

NOW READY.

JAMES HEDDON, DOWAGIAC, MICH.
4td-5b

ITALIAN QUEENS.

Our motto is "Fair dealing." Our Mr. Steckler is a German of 40 years' experience in bee culture, a man of integrity, German thrift, one who gives careful attention to details in queen-rearing. The best Italian mothers to be obtained are our mother queens. See prices in February advertisement.

J. W. K. SHAW & CO.,
5d Loreauville, Iberia Parish, La.

One-Piece SECTIONS, Dovetailed;

HIVES OF DIFFERENT VARIETIES;

FRAMES, SHIPPING - CRATES, WIRE
NAILS, ETC.

Send for circular and price list before purchasing.

MILLER BROS & CO.,
5-7-9d Dryden, Mich.

MAMMOTH RUSSIAN SUNFLOWER SEED, sent postpaid; 1 oz., 5c; 1-lb., 20c; 1 lb., 30c. Send \$1.00 previous to Apr. 15th, and I will book order for Italian queen, to be sent in July, and send 1/2-lb. of the above seed free of charge. All queens bred from choice pure stock.

O. G. RUSSELL,
5d Afton, Chenango Co., N. Y.

WOOD SEPARATORS. A superior article, sliced from seasoned lumber. Give good satisfaction, and are the best, cheapest, and most desirable separator in use for obtaining comb honey in sections. Also sections for nailing. Wire Nails, and Tin Points, for glassing, Smokers, etc. C. R. ISHAM, Peoria, Wyo. Co., N. Y., or C. J. Van Eaton, York, Liv. Co., N. Y.

75 COLONIES

BLACK AND HYBRID BEES FOR SALE.

Address S. D. McLEAN, Columbia, Tenn.

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HONEY COLUMN.

CITY MARKETS.

MILWAUKEE.—*Honey.*—The market for honey is quite dull, and values range from 12½¢ to 13¢ for white 1-lb. sections, and possibly, in some cases, if very fine, 14¢ may be obtained. Extracted is slow at 8¢ per lb. *Beeswax*, 28¢ to 35¢ for choice.

March 4, 1885. A. V. BISHOP,
142 West Water St., Milwaukee, Wis.

CLEVELAND.—*Honey.*—The honey market is about the same as last reported; sales very dull, and only the very best in style of crate and color of honey wanted. Best white 1-lb. sections sell at 14¢ to 15¢; second grade, 13¢ to 14¢. Extracted, no sale. *Beeswax*, 28¢ to 30¢.

March 10, 1885. A. C. KENDEL,
115 Ontario St., Cleveland, O.

ST. LOUIS.—*Honey.*—Extracted honey in barrels, very dull, held at 51½¢ to 52¢ for Southern. Northern in kegs, worth more. There is a slightly better demand for comb honey. Choice white clover in one-pound sections, 14¢ to 15½¢. *Beeswax*, not much arriving. Quotable at 26¢ to 30¢.

Feb. 24, 1885. W. T. ANDERSON & CO.,
104 N. Third St., St. Louis, Mo.

CHICAGO.—*Honey.*—The honey market is again lifeless. It is difficult to effect sales, and it can only be done by a case at a time; 10¢ to 15¢ is the range. Extracted dull. *Beeswax*, 30¢. R. A. BURNETT,
March 11, 1885. 161 S. Water St., Chicago, Ill.

DETROIT.—*Honey.*—The honey market is dull at 12½¢ to 13¢ for 1-lb. sections. A. B. WOOD,
Detroit, Mich., March 11, 1885.

I have 3 bbls. of white honey left. They weigh 370 lbs. each, net. I will take 8½ cts. per lb. at Ithaca. Money orders may be sent to P. M. with orders to be delivered when shipping bill is presented. Orders payable at Ithaca, Gratiot Co., Mich. Honey is all from white clover and basswood.
Address F. E. TOWSEND, Newark, Mich.

CONVENTION NOTICES.

The semi-annual meeting of the Boone County Bee-keepers' Association will be held in Lebanon, Ind., April 2, 1885. A general invitation is extended to all.

ORA KNOWLTON, Pres.
S. H. LANE, Sec.

The Northern Indiana and Southern Michigan bee-keepers will hold their next meeting at the Court-House in Goshen, Ind., on Friday, April 3, '85. All bee-keepers are invited to come.

Middlebury, Ind. F. L. PUTT, Sec.

The Tuscarawas County Bee-keepers' Association will meet at New Philadelphia, O., on Thursday, March 26, 1885. We earnestly request all who are in any way interested in bees and bee culture to attend.

GEO. F. WILLIAMS, Sec.
A. A. FRADENBURG, Pres.

The Willamette Valley Bee-keepers' Association will hold their annual meeting at Lafayette, Yamhill Co., Oregon, on the third Wednesday in June. Everybody invited, with request to bring fixtures or any thing that will help to make it a pleasant day.

Newburg, Oregon. CYRUS HASKINS.

The 6th semi-annual meeting of the Western Bee-keepers' Association will be held in Unity Chapel, Felix Street, between 9th and 10th, St. Joseph, Mo., on Thursday and Friday, April 9 and 10, 1885, commencing at 10 A. M. of the 9th. All interested in bee culture are invited to attend and make the meeting as interesting as possible. A full programme will be prepared, and a general good time may be expected.

C. M. CRANDALL, Sec.,
Independence, Mo. A. A. BALDWIN, Pres.

Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they want to dispose of, we will use notices free of charge, as below. We do this because there is hardly value enough to take queens to pay for buying them up and keeping them in stock, and yet it is often quite an accommodation to those who can not afford higher priced ones.

I have some nice hybrid queens on hand now that I will kill this summer, and it is something I hate to do—that is, kill a queen of any description. I will take 3¢ a piece for them. That will just about pay postage and caging, and the trouble of sending them off.

C. W. HICKS, Fairview, Wash. Co., Md.

QUEENS FOR SALE.—Hybrid queens, 5¢ each; black queens, 25¢ each, from June 1 to Oct. 1. Safe arrival guaranteed.

R. H. BAILEY,
7-11db P. O. Box 81, Ausable Forks, Essex Co., N. Y.

I have 6 hybrid and 6 black queens to dispose of, 60 and 2¢ each. Safe arrival guaranteed.

HENRY WRIGHT, Selma, Dallas Co., Ala.

I have some hybrids the friends can have at 50 cts. each, if they apply soon.

D. MCKENZIE, Carrollton, N. O., La.

I have 20 black queens for sale at 50¢ each, 200¢.

A. W. BRYAN, San Marcos, Hays Co., Texas.

QUEENS in MARCH.

We are prepared to fill orders for untested queens during March at \$1.25 each.

J. M. KILLBOUGH & CO.,
San Marcos, Hays Co., Texas.

I have untested queens for sale in March, April, and May.

NELLIE ADAMS,
Sorrento, Orange Co., Florida.

DADANT'S FOUNDATION FACTORY. WHOLESALE AND RETAIL. See advertisement in another column.

Waterbury Watches, Old Series.

In order to close out the old ones, we will sell the following watches while they last, as follows:

Five watches, first series, in good running order, but some of the cases look a little shabby. Mailed postpaid for \$1.50 each. This gives you a timepiece, without any particular regard to looks, for the small sum of only \$1.50.

Of series A we have five dozen. These have nickel cases, and are in good running order. The objectionable feature is, that they have an opening in the dial. We will send these for \$2.00 each.

Of series B, we have 31 watches left. These are equal to any in appearance and time-keeping qualities, only they have not some of the more recent improvements. So long as they last, \$2.50. I have carried all the above, to test them myself individually; and any one of them that does not keep time when you get it may be returned at my expense.

A. J. ROOT, Medina, Ohio.

DIXON & DILLON,

Parrish, Franklin Co., Illinois.

Manufacturers of and Dealers in all kinds of

APIARIAN SUPPLIES,

at the lowest prices. Also pure ITALIAN BEES and QUEENS. No other bees kept in our yards. For further information, send for price list.



Vol. XIII.

MARCH 15, 1885.

No. 6.

TERMS: \$1.00 PER ANNUM, IN ADVANCE; 2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00. 10 or more, 75 cts. each. Single Number, 10 cts. Additions to clubs may be made at club rates. Above are all to be sent to ONE POSTOFFICE.

Established in 1873.

PUBLISHED SEMI-MONTHLY BY

A. I. ROOT, MEDINA, OHIO.

Clubs to different post-offices, NOT LESS than 90 cts. each. Sent postpaid, in the U. S. and Canada. To all other countries of the Universal Postal Union, 50 cts. per copy extra. To all countries not of the U. P. U., 42 cts. per copy extra.

WIDE TOP-BARS, ETC.

ALSO SOME MATTERS CONNECTED WITH THE CONSTRUCTION OF HIVES GENERALLY.

I HAVE just read Bro. Alley's article on the above subject. I once thought just as Bro. A. now thinks. Nearly all my bee-keeping friends used $\frac{1}{2}$ -wide top-bars. I was fresh from Father Langstroth's book. I used $1\frac{1}{2}$ -wide top-bars, as that book advised. I discussed much with my friends about it. I told them that narrowing the space between the bars tended to dissuade the bees from building brace-combs therein. That was the way I understood it. I had used the one width only. These friends claimed just the reverse. I saw that their hives compared with mine proved their side of the argument, but I thought there must be some other factor to influence the matter in *this* case. I knew that bees were less apt to build comb in small than in large spaces, behind the end-bars, and other places. My theory was all the time right; but the facts were all the time against me.

Well, I cut down to 1-16. I was glad I did. Then to one inch, and I liked that better; then to $\frac{1}{2}$, and I like that better still; and I own up, slowly but surely, beaten. It is just so with the slats of honey-boards; as I said in a late article, the queen-excluding spaces are much worse filled with comb than those $\frac{3}{4}$ wide. Experience will do for you what it has for me,—settle it to your satisfaction.

Bro. Hatch is in error, if he thinks that I meant to claim that the bees would not build brace-combs between the *brood-frames* and the slats of the honey-board. Of course, they will; and if the honey-board is not there, these same brace-combs will be built to the sections, or wide frames, and this is just why

we want it there. The idea I meant to convey was, that they would build between the *sections* and honey-board, but very little if any. Whenever we have contracted to five combs it brought the spaces just exactly over each other, and then we had to shove the honey-board sidewise on the hive, or up came the brace-combs, as the spaces no longer "broke joints" with each other. What Bro. Hatch says about moral patent is too true. The honest pay while the dishonest go free.

Bro. Flory, in his article on page 162, seems to think we use a honey-board to each case, while none is needed except just over the brood-frames. Now, Bro. Root, we make our hives and extracting-supers of pine. Our supers were all at the apiary; but the one we sent you was a very old one that had been mislaid about our shop up here in town. I knew it was a little scant, but thought it would do for a sample (we charged nothing for it), and thought you would overlook that. We talked about that here when we packed it. Pine is best about shrinking; but whitewood is best to hold paint. You have not described the super correctly. It has no raves, or cleats, around it like the hive. It is $\frac{1}{2}$ inch shallower than the hive. The frames (the same as used below) rest flush with the bottom, the bee-space below being in this same honey-board. I know wabbled slots are out of the way, but not as good a hand-hold as the large end-cleats, and we make hives more to use than to ship. It is, however, of not so much importance how the super is made. Let it be the same length and width of the brood-chamber, and one-half inch shallower, or just so the frames rest even with its bottom, and take the same kind and number of frames that the brood-chamber does, which, by extended experi-

ment, I have found better than to have any different number or style of frames for the upper story.

Bro. Garwood (page 170) suggests a change in my reversible frame. One year ago I made 8000 of them. Please figure the difference in cost, when his "hoop iron" and "screws" are added. I used about seven dollars' worth of wire nails, two to hinge each frame. I also figured on screws, and they were going to cost about \$25.00.

I will close by returning thanks to you for what you said about the honey I sent you. It is bringing me lots of orders. I thought it good, and meant to give "big weight." Also to Prof. Cook for his sentence on page 179, both for the words of praise for me, and sound logic and morals in a general sense.

Dowagiac, Mich.

JAMES HEDDON.

It seems to me you have made a little mistake in figuring on screws, friend H. Sixteen thousand 3-inch screws will cost only about \$8.00 instead of \$25.00. In fact, we can furnish them for that, and I think I should prefer screws for reversible frames to wire nails. The idea is, that the hoop iron will permit us to use the frames we are already using, while your arrangement does not. A top-bar made of a strip of folded tin would also fix the depth pretty nearly right; but after figuring on it, I decided it would get bent or doubled up. I suppose the wooden bars for the frame to turn on will be a little cheaper than the hoop iron, but the labor of attaching the hoop iron to the top-bar would be more than the value of the material. My experience agrees with yours in the width of top-bars.

BEES—TEMPERATURE INSIDE CLUSTER.

DO BEES HIBERNATE?

IN talking over W. F. Clarke's hibernating theory some three months ago, a friend remarked: "Would you not like to know just the temperature maintained in the inside of a cluster of bees of sufficient strength to occupy five or more spaces between the combs?" I replied, that I did not believe that bees ever hibernate, according to the general meaning of that word; for Quinby tells us, in his "Mysteries of Bee-keeping," that the bees in the inside of the cluster in cold weather, are as lively as in summer, while those on the outside are somewhat stiffened with the cold, which I had found to be so; hence the temperature in the center of a cluster of bees must be about the same as our summer temperature.

Soon after this I noticed these words in the *American Apiculturist*: "Not one of this class can tell us any thing reliable about the winter temperature of the bee-hive," the "this class" referring to entomologists. I thought, if no one knew what the inside temperature of the bee-hive was, that it was time we did. I therefore instituted a search through all the volumes of GLEANINGS, by means of its copious index, only to find these words in Vol. IV., page 10: "Now, when bees are massed together in a cluster they keep up an animal heat that keeps the whole cluster above freezing." If there is any thing else in all of the 13 volumes, bearing on the subject, I failed to find it. Having a desire to know, now kindled into enthusiasm. I procured, at a high price, the best self-registering spirit ther-

mometer possible, and soon had it in the center of a good colony of bees which occupied a sphere of about 8 inches in diameter. As I could not get the case holding the thermometer between the combs, I slipped the graduated part with the spirit glasses from the case, and, by means of a rubber band and a bent wire, fixed it so I could suspend it where I wished. I found that even now I must spread the frames in the hive, in order that this graduated part might go in the hive, for there must be a space of $\frac{3}{4}$ inch between combs for it to slide down into.

As zero weather has been the order of the day for the past six weeks, I disliked to disturb the bees; but I soon saw that this zero weather was just the time for the test, if I would have it reliable. I hesitated no longer, but pried apart the frames, which, in the cold, went apart with a snap, which soon caused a fuss to be made; and in spite of all I could do (I had no smoker with me) many bees were lost by darting out as the center of the cluster was disturbed, which showed that they were far from hibernating; although half a minute before, the colony hardly gave signs of life. This thermometer registers cold as well as heat, by having two spirit balls and two steel bars, or registers. These registers, when placed in the hive, were set where the temperature stood in my coat-pocket in which I carried the thermometer, which was about 45°, when it was placed in the hive at 4 o'clock P.M. Upon taking it out the next morning (again losing bees which were drawn out by the thermometer) I found I had only a satisfactory register of the heat the colony had attained in the disturbance (which was 87°); for as soon as I drew it out of the cluster, and before I could brush the bees off from it, the mercury was forced down on the cold side several degrees. I now took it to the stove and left it till the heat side showed 106°, with a corresponding degree noted on the cold side. I now drew down the steel register on the cold side by means of a magnet provided with each thermometer, and then wrapped it in a warmed cloth, when, as soon as possible, it was again placed in the same colony. During the afternoon the weather became severe, and continued so for five days, during which time the mercury outside went as low as 16° below zero. When the storm abated, the thermometer was taken out, when I found that the coldest point reached in the cluster during those five severe days was 65° above zero. In like manner I kept experimenting on several colonies until I found that the average temperature of a good colony of bees in the middle of the cluster is 64° when the mercury is at zero outside the hive, and that, for every 15° of change (outside) from this point, the change in the cluster is one degree. Thus: 16° below zero, 63°; zero gave 64°; 15° above gave 65°, and 28° above (the highest it has been during my experiments) gave 66° in cluster. All the colonies were in chaff-packed hives, with sawdust cushion 4 inches thick over top of hive, and nearly covering the chaff on all sides. Some of the colonies had honey as stores, and some sugar syrup; but I could see no difference in heat in favor of either one.

I next placed this thermometer within half an inch of the outside of the cluster, both at the top and at the sides, and found that the temperature varied here from 46° to 52°, according to place and coldness of the weather. At one time it touched 45°, thus showing that, just outside of the stiffened, or hibernating bees, as Mr. Clarke would call them,

the temperature is the same as that at which bees will barely fly in May. Unless my bees have a chance to fly soon, the prospect is that these experiments will cost me something; for some of the colonies thus treated are getting quite uneasy, and show signs of the bee diarrhoea.

By one experiment I find that the lowest temperature in a diseased colony is 75°. I believe them to be rearing brood, but can not well open the hive, on account of the steady cold. From the above I think all will see that it is impossible for bees to hibernate when they must burn honey enough to warm a temperature of 16° below zero to 6.° above. This makes it also plain why it takes less honey in the cellar to maintain 64° to 67° of heat in the cluster, where that of the outside never goes lower than 47°.

I may next winter take notes regarding these inside the cellar; but as I have not been inside the bee-cellar since Jan. 13, I shall not try the experiment this winter. G. M. DOOLITTLE.

Borodino, N. Y., Feb. 28, 1885.

Thanks, friend D., for the positive facts you give in this matter; but I do not quite see that you have settled it after all, for you say the cluster was disturbed by putting in the thermometer, and without a doubt the temperature rose rapidly as soon as you began to disturb them. I fear you skipped over something in the back volumes of GLEANINGS coming pretty near to this point. It is where I spoke of pushing my hand under the cushion, just over the cluster of bees, to see if they were alive. In the house apiary I used to do this often, and it seemed like putting one's hand under an old hen while she is sitting. I think I described it something that way. Now, had you pushed your thermometer right over the cluster, a thin sheet of cotton or enamel cloth only intervening between the bees and the thermometer, it seems to me you would have accomplished almost as much, as the heat rises, and would keep the cushion and all above it pretty nearly, I think, up to the temperature of the cluster. But even this disturbance would probably elevate the temperature of the cluster.

Now a word in defense of friend Clarke's theory. Sometimes a cluster of bees is warm and lively, and at other times it is not so lively. Quite a number of us have at some time or other pulled the combs out of the hive, thinking the bees were dead; but we finally decided they were only asleep, or in a sort of dormant state; for after a while they woke up and could sting as well as any bees. When we find them thus, they are so knotted together that it seems to me next to impossible they could stir enough to move even a leg or a wing. They are packed into cells, and squeezed together in combs, until one would never believe so large a number of bees could be put into so small a compass. I remember one spring when a certain hive did not come out to fly, while the rest did. I looked in and decided that the bees were gone; the combs were clean, and full of stores, and I had commenced taking them out, until, down in one corner of the hive, I found a ball of bees about the size of a large apple. When this ball unrolled, or unfolded, they filled the hive pretty tolerably.

They were not up against the cushion at all, but down toward the bottom-board, and there was frost all through the hive, except close up to this cluster. They made no sound, that I could perceive, and no movement, until I pulled them to pieces, and let the sun down on them; and it seemed, when taking the combs out, as if I should tear them limb from limb, so tightly were they tied up in their winter nap. I presume this thing is familiar with hundreds of our readers; and I believe that most will agree that bees, when knotted up in this manner, always winter splendidly. I have no idea that the temperature of this ball was as low as the freezing-point; but it seems to me it might be down about the same as the bear and the woodchuck when they lay themselves away. I have for years supposed they sometimes go into this semi-dormant condition, and at other times that they do not; or I have thought that perhaps some colonies had a fashion of going to sleep, and sleeping for weeks or months in this way. I do not believe we need now many theories on the subject, but we do need facts; and I for one should like to have my bees winter in these little tight balls; at least, it seems to me that is what we want.

FROM BURMAH.

The *Apis dorsata* Heard From Again.

HOW FRIEND BUNKER SUCCEEDS WITH BEES.

BROTHER BROT: It is very kind of you to say for my poor notes to you, and to send your valuable magazine free at the same time. I really don't expect pay, nor ask it. I shall be most glad if I can in any way add a little to the sum total of bee-knowledge in the world, and at the same time afford myself a most delightful study in natural history.

I am off to-morrow morning for a long preaching tour among the wild Padang Karens, so I just write to say that I shall take much pleasure in studying the *Apis dorsata*. I have a large church near by (20 miles off), which has in its possession scores of swarms of this bee. I can get every opportunity to study the bee, and will do so. I think I will get a sheet of brood, and put it into a swarm of common bees, and see what will become of it. I have now five swarms, all doing well. One swarm has trebled in size in two months, under stimulative feeding. I am keeping careful notes, and shall be glad to report progress, but don't think you must pay me for my writings. I want to help, not only for the good of others, but for myself and my people. The study of bees is a fascinating one, even in the very small beginning I have made.

My bees are of two kinds, quite distinct. One is small, 6½ cells to the inch, brown, wings give off colors in the sunlight, gentle, and active. The second are larger, 6 cells to the inch, black, active, and aggressive. They went to robbing a stronger swarm the second day after being transferred. I have not had them long enough to tell all the differences yet, but am studying them, and will report in due time.

I am now going out as a fisher-of men, and shall leave bees behind. I hope I may catch some souls. The fields are white for the harvest. Oh, where are the reapers? One man for 77 districts and stations,

and for thousands of heathen! Who is sufficient for these things? But God can do his will, even with a feeble instrumentality. A. BUNKER.

Toungoo, Burmah, Dec. 15, 1884.

Why, friend B., is it really a fact that you are right in the neighborhood of the *Apis dorsata*? Do you mean that your people belonging to that church have the *Apis dorsata* in the trees, or have they got them in hives? In any event, you seem to be a providence to the bee-keepers of the world. Our short-hand writer suggests that the solution of this difficult question of getting hold of this race of bees is to come through our missionaries, as have many of the greatest blessings the world has ever received from lands hitherto unreached by the gospel. May God bless your efforts in working that great field where laborers are so few!

"THE SILVER LINING"—A BOOM IN CUBA.

600 LBS. OF HONEY FROM A SINGLE COLONY IN ONE SEASON, WITH THE AID OF THE HOLY-LAND BEES.

THE cloud is seldom so dark that it has not a silver lining; but three months ago it seemed impossible that there could be much light behind the gloom of despondency and doubt that hung over our future prospects for a favorable report of our first year's work upon this wave-washed little spot of land here in the middle of the ocean. But we had "builded better than we knew;" for when the first day of December opened we had 113 colonies of bees left from the summer's wreck; and with the advent of December came the bellflower with all its hoarded stores of sweetness, and such storing of honey as our 113 colonies in a weak condition did for 61 days was seldom if ever seen, I think. During that time they stored 49,125 lbs., making an average of 355 lbs. to the colony, with 10 lbs. to spare.

Good and grand as this average is, it is not what is possible or probable in Cuba, with colonies in good condition when the harvest opens; but as I told you in a former article, we did not know how to manage our bees for a winter honey-flow. When the harvest began we had perhaps 25 colonies in fair condition to store honey, and we weighed the honey from one of these as it was thrown out, which amounted to 625 lbs. While I know that even 600 lbs. is a "terrible" yield per colony, for a large apiary, yet with bees in such condition as any Northern bee-keeper would have his bees in for a June or July harvest, 500 lbs. to the colony I do not think would be putting the figures out of reach or too high, for this crop of honey that we have just harvested is to be credited to Cuba's resources in that direction, not to our management, for the latter has been one succession of blunders, because, to manage bees for a winter flow, is as different as the management for a spring and summer flow as a locomotive is different from a prairie schooner. And then the strain of bees has all to do with the result. The Italian bee will not do for Cuba. Why? Listen and see. The Italian is credited with having a great deal of sense, and their judgment in that line stands them in a good light in the North; for as soon as our dearth of honey begins the first of July, the Italians stop laying,

and for four months they lay hardly enough to furnish bees to protect the combs from the moth; then when the honey dearth is over, the winter months are upon them; then they want to go into winter quarters; and the first day of December, with the grandest honey-flow in the world, finds the Italians with no bees to gather it.

Now this 19th day of February they are getting strong; but of what use are they now? Our white-honey flow is gone, and for the next four months they will breed and swarm to their hearts' content; but, to what purpose? To be able to sleep through the next December and January honey-flow.

Well, after what experience I had had with the Holy-Lands in California, I concluded to try them in Cuba. So we ordered a breeding queen from D. A. Jones; but when her bees came out they were so very cross, that we thought it would be impossible to handle them during a surplus season, so did not raise more than 25 queens from her; but there is where we fooled our own selves, for the bees reared from the daughters of the Jones queen were as easy to handle as the Italians or blacks; and for honey-gathering they stood over them all as a class. Why? because they had bees to gather it. And why did they have the bees? Because, during the fall months (even when there was no honey coming in) the queens kept laying; and when at last the clouds did lift, there was the silver lining. The Holy-Lands were ready for business. Now, friend Root, can you see why the Italians are not good for the Cuban bee-keeper? Again, I say, all this we had to learn; but if "fortune favors the brave," look out next winter. When, after two months of steady hard work, extracting every day, the Cuban bee-keeper finally "rests from his labors," he not only has a good crop of honey in number of pounds, but he has as fine a crop of honey in quality as the world can produce. Cuba can, in a few years, "without fear or favor," challenge the civilized world to beat her in quantity or quality. He that thinks this is boasting, let him watch the progress and returns from this industry for the next ten years. But it must of necessity go a little slow for the first years, for the art of managing bees for winter work must be fully learned, and I am sure it can be; then the coast is clear, for the honey is here—there is no doubt of that.

One word now to my brother bee-keepers of the North, about overproduction, and I am done. Let no one who keeps bees in the U. S. fear that Cuban honey thrown upon their markets will ever reduce the price of their honey one farthing; for such honey as is produced here by the use of the extractor will not go to the U. S.—but a very small per cent at least, but will find a ready market in the old countries, where it will be used principally for medicinal purposes. So, brother bee-keepers, go ahead and produce all the first-class honey you can; it will sell.

A. W. OSBURN.

San Miguel, Cuba, W. I., Feb. 19, 1885.

Friend O., the above sounds something like it; and from what experience I have had with the Holy-Lands and Italians, I can readily understand how the result you mention is possible. The Holy-Lands would go to work and raise bees right straight along, drought or no drought, you may depend on it; and when the time comes to gather honey, they would probably be "up and dressed;" and the next move will be, not for Cal-

ifornia, nor even for friend Hart's vicinity down in Florida, but straight for the island of Cuba. Well, well, what next?

PROMINENT BEE-KEEPERS.

Our Friend Wm. Muth-Rasmussen, of the Pacific Coast.

HOW HE LOOKS AMONG HIS FRIENDS.

OUR friend whom we mention above, and whose picture we give below, has been for many years a sort of representative man among California bee-keepers. We shall not attempt to give much of a biography, for he very kindly furnishes us the following letter:

Several years ago you were kind enough to send me, at my request, your photograph. Please accept hereby mine in return. I do not pretend to be a "prominent" bee-keeper, nor do I belong to the very extensive ones, having seldom exceeded over 100 colonies at any one time. But I claim to be a bee-keeper from the bottom of my heart to the very tips of my fingers. About 16 years ago I was attacked by the bee-fever, and have suffered from the complaint ever since.



WM. MUTH-RASMUSSEN.

By way of a "biography," I will add that I am a Dane by birth, and, after receiving a good college education, I learned the trade of machinist. In 1869 I came to this State, and, finding business very dull in my own trade, I engaged to work a summer for a bee-keeper in Los Angeles Co. Well, I found that I liked the business, could stand the stings, etc., and I have stayed with it ever since. After living at Los Angeles for ten years I moved to Inyo Co., where I have now been located during the last five years; have for several years been Vice-President for California, of the North-American Bee-Keepers' Society, though I do not regard that as owing to my "prominency," but simply to the fact

that I occasionally appear as a contributor to the bee-papers. During the last year I have been engaged to furnish regular articles for the bee-keepers' department of the *Pacific Rural Press*.

I send this picture, principally in the hope that other bee-keepers, whom I have known for years through their writings, may follow my example, and thus not only aid you in keeping up this department of GLEANINGS, but give us all the pleasure of looking at each other's faces, though we may never become personally acquainted.

By the way, friend Root, why don't you give us the picture of Doolittle, James Heddon, Mrs. Harrison, and other well-known and appreciated writers, whom you probably have in your "bee-keepers' medley," and could transfer into GLEANINGS?

WM. MUTH-RASMUSSEN.

Independence, Inyo Co., Cal., Jan. 26, 1885.

Friend M., we would have given Doolittle's picture long ago, but he would not let us have it; said he had not time to go to the artist's and have it taken, or something like that. Mrs. Harrison sent us her picture, which you will find on page 275 of the A B C book, and in GLEANINGS, page 123, 1882. Since you mention it, it occurs to us that Heddon's picture would come in very nicely at this crisis; and so, friend H., straighten up a bit, rub the cobwebs out of your eyes, and send us your picture, and we will tell our engraver to do his level best. If you are busy just now, send us some picture you had taken some other time. It will be like you, no doubt.

"THINKETH NO EVIL."

I HAVE just read GLEANINGS for Feb. 15. In reply to Bro. Heddon, I will say that I meant page 2 instead of 20. I can not say whether the mistake is mine or the printer's, nor what year the price list is for, since there is no date on it. I presume Bro. H. is right when he says he meant the 1 $\frac{1}{2}$ -inch sections would not weigh a pound when separators were used, but he says so only by inference.

I had not received his price list for 1885 when my letter to friend Hutchinson was written, so the part concerning the making crates for 8 cts. does not count; but the next hit, where he gives rather a broad hint on my veracity—did you ever? What will come next? I have not the pleasure of personal acquaintance with brother H. or I should feel rather hurt at that; but as it is, we will let it pass as a "scientific pleasantry." I did think of these moral points, Bro. H., and that is just what set me to writing.

C. A. HATCH.

Ithaca, Wis., Feb. 16, 1885.

Thank you, friend H. I should be very sorry indeed to see any thing unpleasant between two good men like Hatch and Heddon, and why should we not all remember that it is a very safe thing to do, to put things *very* mildly? It almost always transpires, when you come to get down to the facts, that it was a misunderstanding, instead of any *purposed* evil. Let us call it "scientific pleasantry," and drop it, and it seems to me there might be a good many more things that we might put under that head.

PURE GERMAN CARP.

DIRECTIONS AND INSTRUCTIONS.

FRIENDS, little did I think, when I sent that piece to be published in GLEANINGS, that it would require half my time (would I do it) to answer at length all letters of inquiry, therefore I have concluded to have them inserted in GLEANINGS. By the way, I will say, from the amount of letters received from all parts of the country, that GLEANINGS must be one among the best papers to advertise in now printed. WHERE TO BUILD PONDS, AND WHO CAN HAVE THEM.

The best site for a pond is where it can be fed by living springs, either hard or soft water, which makes very little difference. If you have not this, a pond built in a hollow, or on a running stream, by throwing up levees, or dams, in order to raise the water at the mouth of the ditch.

If you have a long ditch, or one running from a spring or springs, it will make a good pond by digging out at the mouth of said ditch, sinking it lower than the ditch. If you have none of these, sink a hole in the ground, and cement it, and it will do.

HOW TO BUILD A POND.

Where you have a good spring, select your place below the spring; and should you wish to lead water by pipe, use nothing smaller than 2-inch. Stake off the size of the pond; no difference if you have one, two, or three banks. Where you want to throw up the levee in order to make the pond, you want to cut what is called a muck ditch. This is done by cutting a ditch 18 inches wide, then throw it out as deep as the soil or gravel extends, then plow the best clay you have about the place, and scrape it into the ditch. We will suppose your place has a bank on the west and one on the north, then you will have to make levees on the east and south, having your muck ditch cut coming up the bank as far as the levee is to be made, but cut same depth as at the other part. Say it is two feet deep in the main, bring it the same depth up the slope. You say, "Why the ditch?" Well, it is impossible to make a joint that will not leak without it. Now you commence scraping, drawing the clay to fill the ditch, say at the west end, driving your team over the ditch every time; this packs it down, and makes it water-tight. After you have the levee two or three feet high, then you can use any kind of dirt to complete it. If you make the levee seven or eight feet high, it ought to be 10 or 12 feet at base. Should the bottom of pond be loam, sand, or gravel, put in three or four inches of good clay, then feed hogs in it a week or two; this will make it water-tight.

In case you build a pond fed by a stream, let in the water by tile or pipe, throwing up levee or dam above as well as below, then cut a ditch around the pond to carry off all surface water. If your pond were in a hollow, and a long slope from both sides, it will be necessary to cut a ditch on both sides, two or three feet above the water, in order to carry off all surface water, and also the overflow of stream.

Should you wish to construct a pond at the mouth of tile ditch, you will proceed as above, except you will have to throw out the dirt in order to make depth, as it will not do to raise the water above the mouth of tile. In case you want to make a pond or tank on a small scale, select the place; and if you have running water to fill it, use pipe or tile to lead

it. If you have no running water, and have a never-failing well, use a wind-pump, which will furnish all water needed. I know of one tank, size 16 feet long, 8 feet wide, and 6 feet deep, dug square, and cemented, fed by a wind-pump, which has proved a success on carp-growing, but not on hatching; but it pays to buy small carp, and stock the tank, feeding them the refuse of the table. I find, since my first introduction to the business, that there are a great many natural ponds in the country, which it is not necessary to speak of, only to say that carp will do well in them, if directions are complied with.

OUTLETS.

These are made according to the amount of water flowing in and out of the pond. If it is fed by a spring or ditch, and no surface water in time of rain, a small pipe or box put in at high-water mark will do; but if fed by stream, or a good deal of surface water, an apron will be required, which is made by taking matched planks, sawing them from 4 to 6 feet long, setting them perpendicularly, making them fit tight together. This must be in the center of levee, lengthwise, letting the top come up to high-water mark, then fill and ram solid, making the clay even with top of plank. Now make your apron the same width of upright, taking care to extend it over the levee to prevent wash. Nail it down; put side-board on, and fill around with clay. Use a wire screen, put on a frame for all outlets, then you can remove and clean when it becomes clogged up.

TO DRAIN A POND.

To do this successfully is something that I have failed to accomplish to my entire satisfaction. In building a pond you put in a box or pipe at the bottom; and if you have water to bother you, you will cut what is called a drain ditch to carry off all the water that accumulates while working. This pipe or box should extend above and below the base of levee. This is the best plan for draining that I have ever found; but the trouble comes in when you wish to use a screen to prevent the fish from passing out. My plan is this: Make a screen of wire, balloon-shaped, as large as a half-bushel, the neck small, so as to fit the pipe in the pond. Use a plug at the outer end of pipe or box, so that you can control the water.

CAPACITY OF POND.

This will depend altogether upon the amount of water passing in and out of the pond, the depth, and the amount of feed given them. Friend R. said he had been informed that 100 five-pound fish would overstock his pond. They would in a few years, but would not themselves. My pond is about 70 feet wide, 140 feet long, and about 7 feet water, when full, and I think it will hold a thousand five-pound fish, and many more. My friends, do not be afraid of overstocking your ponds. If you find you are getting too many, catch them out and eat them.

Andersonville, Ind.

W. S. KALER.

For lack of space we shall have to defer the remainder of this valuable communication until the next issue. While some of the directions given are not quite in harmony with our forthcoming book, of which we have already corrected a part of the proof-sheets, friend K. has some original and valuable hints. The one item of putting clay in the bottom of a pond having a gravelly base, and then feeding hogs on it to get them to stamp it down well, is an exceedingly bright thought. I know from experience that it would do the business to a dot.

HARMONY AMONG BEE-KEEPERS.

An Humble Attempt to Harmonize the Views of Heddon, Cook, and Doolittle, on the Causes of Bee Diarrhœa.

FRIEND BALLANTINE TAKES A SORT OF BIRD'S-EYE VIEW OF MEN, BEES, AND OTHER THINGS.

THE great Dr. Cumming, of London, in his eloquent lectures on the book of Revelation, makes this observation: "A great deal has been written upon this book; much very foolishly, more very rashly; nothing, however, in vain." We reach the same thing in regard to bee literature. Many foolish theories have been promulgated; many rash assertions made, but nothing in vain. All seem necessary to elicit the truth.

The hypotheses and theories formerly entertained in regard to the motions of the heavenly bodies, however preposterous and absurd as they *now* appear to us, were, however, necessary to the evolution of the Copernican, or true solar system, as now received. When these false hypotheses and theories were proposed, they elicited investigation. In proving them false, the true system was by degrees evolved. Astronomers can now calculate with accuracy, and demonstrate with certainty, eclipses, the rising and setting of the sun, for every degree of latitude and longitude on the surface of the globe. They are not even content with this, but extend their knowledge far beyond the limited orbit of the earth, and calculate the eclipses of Jupiter's satellites and Saturn's moons. The data to calculate the velocity of light, the power of attraction, and many other marvelous things, have thus been obtained, in a measure, through foolish theories and false hypotheses.

When we find this true, not only in the science of astronomy, but in all other, may we not expect that the same results will flow from the science and art of bee-keeping? Let us endeavor to demonstrate the correctness of this conclusion.

Mr. James Heddon, of Dowagiac, Michigan, some years ago advanced the new and somewhat startling theory that pollen, the natural food of bees, was the cause of all our "winter's discontent." Some were surprised at its boldness, others were struck with its novelty, while still others were tempted, out of curiosity, to wisely investigate it, and ascertain its truthfulness. These, like the philosopher who, when his companions were warmly discussing, why a bowl full of water would weigh no more with a fish in it than it would without it, calmly suggested they ascertain, first, by weighing the bowl with and without the fish, whether it was so or not, before endeavoring to account for it.

In the conviction of all who have thus investigated the pollen theory of diarrhœa, *per se*, by itself, as the sole cause, it is marked "*Tekel*—weighed in the balance and found wanting." But has there no good resulted from it? Far from this, it has been the means of eliciting some truth. Professor Cook, renowned for his entomological lore and skillful dissection of the insect race, has given a *quasi* indorsement of the so-called pollen theory. He thinks that colonies destitute of this nitrogenous food will winter better than those which have it. When such men are inclined to give the weight of their influence to any suggestion or novel theory, it almost staggers the man of experience, let alone the novice. Taking Heddon's theory, with Professor Cook's experience and judgment in its favor, and

we are inclined almost to say, "There is either some truth in it, or else these men are terribly mistaken."

But, friend Doolittle comes in with his calm, sagacious, and inductive philosophy, and asserts that he thinks the cause of bee diarrhœa is when colonies are breeding, and when the young bees are prevented from having a flight. This view he has sustained by observations, made at various times in his own apiary. We believe there is a moiety of truth in this, although we have never observed the phenomena that friend Doolittle has.

Reasoning from analogy we are brought to this conclusion: That insects, as well as other animals, have their intestines full of a peculiar kind of matter that must be voided shortly after birth, to secure the healthy and vigorous action of the system. This matter is technically known as *meconium*. An infant, a calf, a colt, and even a lamb, will not thrive until this passes off. Is it, then, not a fair inference to say that the young of bees must, in like manner, have an opportunity to void this increment, to insure health and vigor? Let us next try to harmonize this trio of bee-savants.

It is a well-known principle, that bees can not breed without pollen. If, then, there is no pollen in a colony, breeding is out of the question. This being the case, according to friend Doolittle's theory there will be no diarrhœa, because no young bees to suffer.

This will chime in with friend Cook's experience. Colonies winter better with him, that have no pollen, and consequently no breeding. Friend Heddon finds that some of his colonies are dying off with diarrhœa, and discovers that all so affected have pollen; he has not made the observations of friend Doolittle, but infers that pollen is the true cause of the bee mortality. His inference, though wrong in charging the whole evil upon the pollen, which is as innocent of producing the death of his colonies as Vennor's theory of this being a "mild" winter was in producing the reverse, is, nevertheless, to a certain extent, in harmony with Doolittle's theory, which inevitably recognizes the presence of pollen. If truth has thus been elicited, friend Heddon has assisted, friend Cook's experience has corroborated, and friend Doolittle's observations have contributed much to its discovery. These men, then, are not unlike the three princes in the Arabian tale, who were enamored of a fair lady, each being severely wounded with Cupid's arrows. The object of their affection being herself unable to decide the question by making a choice, it was agreed that the three princes should travel for a year in any portion of India, of their own selection, and the one who would secure the greatest benefit for himself and mankind in general would be the happy party. One procured a piece of carpet of so potent a power that it would transport its owner, and others whom he permitted to sit upon it, to any part of the globe desired. Another procured an eye-glass that would enable its owner and others to see any object wished. The third procured an apple, of such divine power as to heal every one, however diseased, that would but smell its perfume. Having all three met at the expiration of the time, at the place agreed upon, each confident of being the victor, one happened to look in the glass, and saw the object of his affection in the agony of death. This being announced to the other two, the possessor of the wonderful apple exclaimed, "If I were only there, I could cure her in a moment." The owner

of the magic cloth said, "All right; let us three just sit down on this cloth, and we shall be there instantly." They did so, and by the application of the apple, the object of their love was immediately restored. But the question, who the happy one should be, was just as undecided as ever. The one with the glass claimed if it had not been for it they would have remained ignorant of the sickness of the princess; the one with the cloth asserted that it was instrumental in bringing them to her assistance, while the one with the apple of marvelous virtue, claimed that the other things were good; but if it had not been for his apple, the princess would have died in their presence.

So Heddon, Cook, and Doolittle are all entitled to some credit, if we have at last found the truth on this subject; but if we have not discovered it, there is progress made. Let friend Heddon proclaim any and every bold and novel view that his fertile and imaginative mind can suggest. It will be tested in the crucibles of hundreds of philosophical minds, and purged from its dross. If it contains the millionth part of a grain of truth, it will be eliminated and carefully added to the already accumulated and fast accumulating treasury of bee-science. If it does not contain a single atom of truth, it must and will be rejected.

WM. BALLANTINE.

Sago, Ohio, Feb., 1885.

Friend B., I like your reasoning, and I pretty nearly agree with you, only it seems to me the basis of some of your calculations ought to be modified a little. For instance, pollen as the cause of dysentery was suggested and discussed at considerable length through the *A. B. J.* over ten years ago. Again, bees are often hatched out in great numbers in colonies wintered in the cellar, and live without any pollen at all until they are a month or six weeks old, and the colonies come out strong and healthy.

PYRACANTHA AS A HEDGE-PLANT TO PUT AROUND OUR APIARIES.

FRIEND OLDROYD'S EXPERIENCE WITH THE ABOVE
FLOWERING EVERGREEN.

IN reading the article from the pen of your friend J. J. Lawson, in reference to pyracantha as a hedge-plant, if it is what I suppose it to be, I hope no one of your many friends living north of Mason's and Dixon's line will be induced to invest any money in it, as I did some eight years ago. Seeing an advertisement in A. M. Purdy's "Small-Fruit Recorder," speaking of it as an evergreen, with beautiful white flowers in the spring, and full of red berries in the fall and winter, I invested five dollars for enough plants to make a hedge about 200 feet long on the east and south sides of my lot. All failed but one plant which I keep as a "remembrancer." It is about 18 inches high, with a few straggling branches, and it has never borne a flower or berry; and as to its being an evergreen, I inclose a slip of the best I could find. Years before that, I had often noticed in the front yard of one of the residences on Broad Street, with a southern exposure, a small scrubby hedge, perhaps 40 feet long, and I wondered why the owner should let such an ungainly-looking row of dwarf bushes occupy a space in his front yard. After mine developed somewhat,

I found they were brothers. The hedge in question is not two feet high, if my eyes do not deceive me. I should surely be very much delighted to have a hedge as described in the "Fruit Recorder" and in GLEANINGS, but there is nothing to be desired in the hedge in this climate.

WM. OLDROYD.

Columbus, O., Feb. 16, 1885.

Thank you, friend O., for your timely caution; but perhaps some in other localities may have had a different experience. If so, will they please inform us?

A WORD ABOUT PATENTS.

"MORAL" AND "IMMORAL."

ED. GLEANINGS:—I notice lately that a good deal is said by friend Heddon and others about the sacredness of a man's right to control the manufacture and use of any article he may have invented, and on which he has got or may get a patent, and all seem to agree that such is according to truth and justice, and that there is but one side to this question; but before I can agree to this proposition it must be made out by better reasons than I have yet seen.

But some will say, "Is not a man's invention his own property? has he not lain awake nights to work it out, etc.?" and I reply there is not nearly so much original invention by any one man as is often supposed. The fact is, inventions grow, and necessity is the mother of them. The research and investigation of the former ages are our stock in trade, so to speak, and we start to build where they left off, and a large part of the patented claims are, when thoroughly sifted, only what some one else used long ago, but never thought of getting a patent.

I have quoted, that "necessity is the mother of invention," and it is interesting to note the way they are brought about. Let there be a demand for an object or an article, such as getting the large proportion of the early honey in the surplus sections, and we have Doolittle and Heddon and Hutchinson and Root and a thousand others lying awake nights, and working out the problem, and presently we shall have a dozen or more inventions with patents, either legal or moral, a large part of which are alike, or nearly so, and quite likely will prove to be what some one else has used years ago; and if not, if some one really strikes something new and valuable, what moral right has he to forbid for seventeen years everybody else from inventing and using the same thing, for it is well known that most valuable inventions are made by different persons, and often at about the same time, although neither knows that any one else was working at it.

I submit, that it is not right to give a man a monopoly of a valuable invention for 17 years, when it is likely a hundred others would work out the same thing without any help from the one who has the legal patent.

L. BECKWITH.

Berlin, Wis., Feb. 10, 1885.

Friend B., it is a fact that very few inventions belong exclusively to any single individual. Almost every thing that comes up can be traced back through different hands innumerable, and frequently it transpires that the one who calls himself an inventor has done, oftentimes, little more than to

couple together and perfect the things that have been worked out by others, a little at a time, here and there. Where so many hands are working on something there begins to be a demand for, the ground becomes worked over and over. The same has proven true on extractors, feeders, cases for holding sections, making sections of one and four pieces, fastening into frames, and, of late, reversing devices for frames. Notwithstanding the above, there seems to be occasionally something worked out almost entirely by a single individual, where he devotes much time to it. Of course, he has, however, to commence on a basis where somebody else left off. Then the question comes. How much right has anybody to a monopoly of these plans and ideas? The grand point that you make, that it takes us all together to bring out any good thing, harmonizes nicely, as you will observe, with my remark at the bee-keepers' congress at New Orleans, under the department of Our Neighbors.

BEE-KEEPERS' CONGRESS AT NEW ORLEANS.

NOTES BY THE WAY.—IN THE NIGHT.

Continued from Last Number.

WHAT a blessing is the modern sleeping-car! A little before midnight I glanced out at the Kentucky landscape. The snow was gone, and bare fields and dry sidewalks met my eye. An hour later the head-lights of the locomotive showed the air filled with large fleecy snowflakes. An event occurred right here that has a great moral lesson in it, and I think it bears especially on us bee-keepers. When railroads were first started, our friends in the South, after more or less consideration, decided on the width of track, 5 ft.; and our friends at the North, without thinking, when they started to lay track, adopted 4 ft. 8½ inches as the width. Simple thing, isn't it? Very likely these early fathers in railroad-ing thought but little about it until traffic demanded that these north and south roads should connect. Even then nothing serious resulted, for a simple transfer of passengers "fixed" it—that is, passengers gathered up their luggage and walked over into a car on the other gauge track. A little later, sleeping-cars came into being, and just now in our journey the change would have to be at 1 o'clock at night. I imagine the passengers scrambling out of the berths of a filled sleeping-car, and piling into another on an adjoining track. Whew! wouldn't there be a fracas? Do you know what they do? Why, they have gone to the expense of a great structure that lifts the sleepers almost noiselessly from the trucks, suspending them in mid air. The trucks are then run out, and others suited for a different gauge are put in their place. After this the cars with their precious freight of sleeping passengers are let down as quietly as they were taken up. This is done so skillfully and noiselessly you would sleep on without interruption unless some one told you of what

was transpiring. The operation of raising up and letting down did not take over two minutes.

"Why in the world do they not tear up these odd-gauged tracks, and make all of the standard size?" said I to Mr. Holmes.

"Why, my dear sir, do you suppose changing the tracks would be all the expense required? All the great rolling-stock must be made over and changed, to say nothing of throwing away good locomotives that cost \$20,000 apiece, or such a matter."

"Well, what are you going to do?"

"Why, we are going to use our present stock until we wear it out, and get along the best we can, changing passengers and changing freight; but all the new work made now is being made with the change you speak of in view. Some time we expect to be able to send any car from Canada to the Gulf of Mexico, and on any road."

The above may not be exactly as Mr. Holmes stated it, but it is in substance. Now, then, friends, do you see its application to bee culture? A great many of us have started just as thoughtlessly as did the railroad men. My neighbor Rice, of Seville, O., when he started with movable frames, just sawed off some sticks and never measured them at all. He refused to listen to my remonstrances, but kept on with his frame unlike any thing anybody ever used before, and until I began to buy bees of him every summer in \$500 lots at a time, each colony having to be transferred before I could make use of it. Arguing in words didn't convince him; but the trouble of transferring each colony into frames like the rest of us use, did the business. He now has no more of those "mongrel" frames.

10 o'clock A. M.—We are just out of Nashville. All traces of ice and snow have finally disappeared; but I have looked in vain for some signs of early gardening; not a trace even, around the suburbs of the city of Nashville, while acres of hotbeds are to be seen close to Cincinnati, where they still have almost zero temperature to battle with.

A sad, sad sight was presented us just before reaching Nashville. Little tombstones, almost without number, covering acres of ground, showed where our boys fought, bled, and died. Can any one look on that burial-ground without almost overwhelming sadness? May God help us, that we may all so live that such an event can never, never happen again.

11 A. M.—Through Southern Tennessee many localities would be difficult for farming and gardening purposes, because one would have to draw dirt to cover the rocks that crop out almost everywhere. The soil is a reddish yellow, but looks very light and fine for tillage.

A good deal has been said, and I think unnecessarily, at least some of it, about the expense of meals on the trip. Now, one can practice economy, and that, too, without the annoyance of carrying a lunch, which many, myself included, so much dislike. At the restaurant on the sleeping-car you can get a good lot of bread and butter for a

dime—good, too, both of them, and many other things in proportion. Very nice oysters are only 25 cts. a dish, and you have a nice little table to eat on. After your repast is over, this little table is just the thing for taking notes, as Ernest is demonstrating, while we glide along smoothly at 40 miles per hour. I enjoy it, any way. If all the roads are as well managed as the Louisville & Nashville, I don't see why anybody should complain.

We do not see horses and wagons at the hitching-posts at the stations we pass. We see rows of horses; but in place of the wagons, only saddles. The roads are so rocky and hilly is one reason, I presume.

12 o'clock.—It troubles me to see so many men standing about in the stores—in fact, all along the way, with their hands in their pockets. It has been a rainy morning, I know; but even during a rainy day, ought our American people to be wasting precious hours of broad daylight with their hands in their pockets? I am afraid there are many thousands throughout our land in this same attitude; but I feel very sure they are not happy in so doing. Don't give away to such weaknesses, boys; do something, if it is a rainy day. Improve your homes, improve your minds, and give a lift in raising humanity by raising yourself.

For some little time back I have been wondering why farmers have allowed a peculiar weed to grow to such an extent; and now it dawns upon my understanding that it is the dried and blackened stalks and pods of the cotton-plant. So we are really gazing on cotton-fields for the first time. The cotton-presses are equally a curiosity, and I had been wondering for some time why there were so many funny-looking "cider-mills."

1 P. M.—As we strike Alabama the rocks disappear, and with them the hills. The landscape seems to be a sort of swamp of evergreens. Now and then are expanses of water around the tree-trunks.

4 o'clock P. M.—A mountain stream comes dashing down among the rocks, which now seem to be more wild and suggestive than at any time before on our trip. In order to reach the high land, the track as it starts up from the swamps endeavors to follow the mountain stream, so to speak. Now dashing, the stream winds a hundred different ways as it plunges through the ravines. As the locomotive can not well do this it crosses and recrosses, taking cuts through hills and across ravines in a way that makes its ascent most exhilarating and bewildering. From the way the engine puffs and labors over about 8 miles of track, it would seem we must have ascended quite a height, leaving the fogs of the valley below. Beautiful little pines and other evergreens, with the fresh mountain air, make it a scene wonderfully fascinating.

Yesterday I felt a longing to see babbling brooks. To-day the longing has been satisfied, if it ever was in my life. Brooks are everywhere pouring down the hillsides from cliff to cliff, rushing and spattering the sides of the track, whether we are on the mountain or in the valley. This is pretty well

down in the State of Alabama. Rushing torrents are everywhere.

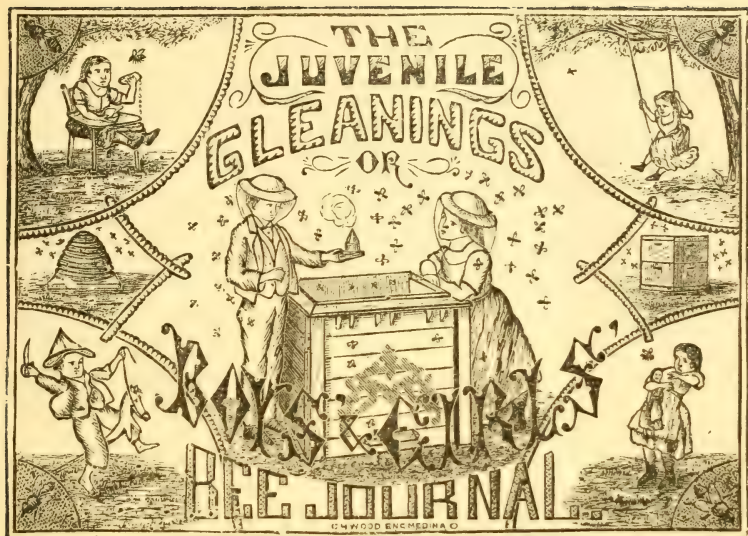
Just here the train stopped a few minutes, and we jumped off to witness better the grandeur of this mountain scenery. A boy with a pitcher was singing out, "Here is your nice red sulphur-spring water, only nickel a glass." We handed him a nickel, and were quite willing to take his word that it was the "genuine simon pure," even if we didn't take more than a small swallow apiece. This is near Blount Springs, a famous watering-place.

In the night.—I happened to wake up as the train stopped, and I heard the tree-toads. Before it was quite daylight we were in the turpentine woods. After leaving Montgomery we saw gardens with peas in blossom, and other vegetables correspondingly far along. Canebrakes just now are an interesting sight. It is the same thing the boys use for fish-poles, and the smaller ones were formerly used for reed pipe-stems. On the low grounds the trees are beautifully draped with Spanish moss, which waves gracefully under the influence of the light breeze. Miles upon miles of Alabama is wild land, apparently of no use to any one. The low lands that produce such luxuriance of canebrake and tall grasses, it seems to me might give wonderful crops of almost every thing, if reclaimed from the water seen everywhere.

The soil through all the South has a queer reddish cast. In some parts of Alabama it is a bright brick red, and in others a brilliant yellow. The babbling brooks that follow almost everywhere beside the track and across the country, partake largely of the color of the soil. One of these said brooks I was so enthusiastic over, washed out a part of the track last night, and throws us into New Orleans half a day late.

As we approach the suburbs of any great city, we as a rule expect to see a gradual improvement in the surroundings, residences, farming lands, gardens, etc.; but the suburbs to New Orleans, however, seem to be an exception. The watery wastes give place to a sort of swamp, composed of bushes and small trees. Little canals run out from the railroad track into these bushes, which puzzled me for a while until I saw negroes pushing large flat-bottomed boats along these canals. The boats were filled with wood. Firewood has got to be so high in price that they split off the sides of stumps, cut up bushes, and pick up every thing for fuel. With the mild balmy air, and the grass starting everywhere, I expected to see beautiful market gardens; but if there were any, they were not along the railroad. In the street-cars running out to the Exposition, I saw cabbages and some other vegetables. Most of the gardening seems to be done by hand. Horses and cultivators were nowhere visible; and as a whole, the gardens in no way compared with those in the suburbs of our Northern cities. The soil is rich and light, but the workmen, so far as I observed, did every thing with a spade—digging up the ground, cultivating, getting out weeds, etc., all with the one tool.

To be continued.



He that is faithful in that which is least, is faithful also in much.—LUKE 16: 10.

MYSELF AND MY NEIGHBORS.

Where no counsel is, the people fall: but in the multitude of counselors there is safety.—PROVERBS 11: 14.

MY neighborly talk to-day will be a repetition, as near as I can conveniently make it of a little talk I gave the bee-friends in New Orleans. I may explain, that it was given without any thought of publication. After I got through, several requested I should put it in print. Well, while I shall do so I shall take the liberty of leaving out a good deal that I do not think will be particularly needed here, and I shall also put in some things that I intended to mention, but omitted. The subject assigned me was—

THE PROGRESS OF BEE CULTURE SINCE 1860.

Before starting out with my little talk, my dear friends, I want to tell you how much pleasure it gives me to meet face to face so many bee-friends from the South, whom I have known for years through correspondence. It also affords me great pleasure to notice among them many friends also from the far North, some of them even from Canada, and one or two from Maine, to say nothing of those scattered here and there almost all over the face of our great nation. I do not know exactly why this topic has been assigned to me, unless it is that I am one among the pioneers, as it were, who first started the development of our favorite industry.

Before speaking of the inventions that have come up here and there through the

years that have gone by, I want to say that it seems to me honor and credit is due not only to the one who brings forth an important invention, but to the age in which he lives. When the age is ripe for invention, the invention comes forth, and it can not well come forth until the age is ripe for it; and when this ripeness comes, usually several come out with the same invention, or facts, almost simultaneously. Our good old fathers Langstroth and Quinby, each one of them wrote a book on bee culture; and when each set about his work he hardly knew of the existence of the other. It is greatly to their credit, also, that when these books came to light it was found that they agreed substantially in all important points. When the age was ripe for steam, steam-engines came, and many efforts contributed to bringing forward and perfecting the invention. When the age was ripe for some more rapid means of communication than our mails, electricity came to our aid, and later the electric lights which now illumine these beautiful grounds every evening. The honor of these inventions is not due to any one man. It is the work of the people; and, dear friends, the progress that has been made in bee culture since 1860 is due to a great many different people—the world at large—because there was a demand for the things brought forth, before they ever saw the light of day.

In the A B C book I have told you how I commenced chasing a swarm of bees. I have told you, also, how greedily I devoured all the bee-books that could be then found on the subject. In 1861, friend Wagner

started the *American Bee Journal*; but after publishing a very pretty little sheet at the modest price of one dollar a year, he was compelled to give it up for lack of patronage. The age was not ripe for it. There it stood for four or five years, until I waked up to the subject of bees and honey, as I have told you.

As soon as I learned that a bee-journal had been once published, I did not rest until I had all the back numbers. None but one who has passed through such an experience can imagine with what keen enjoyment I devoured every page of those first twelve numbers. When I get down the old books and look them over now, it thrills my heart anew to remember those good old times that I had with them that summer studying Langstroth and these twelve numbers while I worked with my bees, and verified, step by step, every thing laid down in the books. I urged friend Wagner to recommence its publication. He feared it would not pay, as he had already sunk money in the enterprise. I told him I would write for the journal, and help to make it pay. Of course, I knew nothing of bees, comparatively; but I presume it is only human nature to be *all the more* ready to write for the journals. I do not mean by this that it is wrong for these young enthusiasts to feel like writing. I *did* write, as some of you may remember, and my awkwardness and my blunders not only provoked smiles from some of the veterans, but it stirred them up to come to my rescue; and as fast as I got wrong they straightened me up, as our veterans ought to do. Of course, I was soon in correspondence with Mr. Langstroth; and although it was late in the fall, I told him I wanted the best Italian queen he owned or could get for me. I was a little astonished when I found the price was \$20.00; but I thought if queens were worth \$20.00 to anybody they certainly ought to be worth that to me, for I was going to be a *big* bee-man, and much depends on starting *right* (you know).

The queen came by express, and at the same time somebody made me a present of a dog. The express agent delivered both, saying he didn't know whether the "animal" he led by the strap was the \$20.00 queen, or whether it was in the box. The neighbors laughed a good deal at my investment of \$20.00 in one single "bug." I introduced her to a colony I had been experimenting with through the fall; and when the yellow bees began hatching out, wasn't I happy? Right here I want to emphasize the fact, that had it not been for kind friends who had more mature sense than I was possessed of in those days of my early enthusiasm, I should have been shipwrecked in my bee-ventures over and over again.

Some time in early winter, a sound practical old farmer a few miles out in the country came and inquired about my Italian bees. He was a thorough and successful bee-keeper, and had the Langstroth hives. I with great pleasure showed him my choice Italians, while I talked volubly about bees and new races. He admired the little yellow chaps some, but did not say a great deal.

After I got through talking he very quietly asked me if I supposed my queen would live through the winter as I had got her fixed.

"To be sure," said I, "why not?"

"Mr. Root," said he, "I believe you have the first Italian queen ever brought into Medina County; and for the credit of the county I am a little anxious she should go through the winter. But if you keep her in that little handful of bees, I would not give *that* for her," snapping his fingers as he concluded the sentence.

He finally invited me to come over to his house, and he said he would show me what a colony of bees is like, that might be expected to winter over. To tell the truth, I had never seen a *full* colony of bees, and did not know how many it took; but by his advice my queen was introduced to a good strong colony, and came through all right. Some time toward spring I found a long yellow bee at the entrance of the hive, and, in great trouble, I pushed her into a quill and mailed it to friend Langstroth, telling him my queen was dead. Can you imagine how I rejoiced when he wrote back that the bee I sent was no queen at all, but simply a worker whose body was much distended and elongated by dysentery? My bees wintered pretty fairly, thanks to the friend mentioned above; and by purchase I was enabled to start out in the spring with perhaps half a dozen colonies. I increased to about twenty; got but very little honey, and lost three-fourths or more of them during the coming winter. Never mind. I was learning valuable lessons. The next season I did better, and went to work and made perhaps the first all-metal honey-extractor. Some of the readers of the old *A. B. J.* will remember my ups and downs. At one time I was very much tempted to give the whole business up in disgust. I did for a while decide to do so. Perhaps the laughs and sneers of some of those who kept saying, "I told you so," was the means of stirring me up to prove to them that I was not so much of a crazy fool after all. I went to work carefully and quietly, with the eleven weak colonies remaining after the disastrous winter, and built them up to 48 good colonies in the fall, letting my extractor stand idle for one season. The 48 were all wintered, thanks to the lessons of sad experience. From the 48 I obtained 6162 lbs. of honey, and sold the whole crop at a pretty good price. After that I did not have any more notions of giving up bee culture.

The times were now ripe for a general advance in bee culture all along the line. Mr. Harbison was doing big things in California; Doolittle was making a start in York State; friend Viallon and our worthy president, Dr. Brown, besides many others I might mention here, were doing their part in the South. Our stalwart friend Mr. Muth commenced to buy honey, and put it up in bottles in Cincinnati, and he stands to-day, perhaps, the largest dealer in liquid honey in the world. Had it not been for Mr. Muth's industry and energy in putting honey upon the market, perhaps many of us might be in the background instead of where we are now. D. A. Jones had secured such a wonderful crop in

Canada that a great many of us began to think it was a great big yarn. He was too busy taking care of his crop to write letters or answer questions very much; and all we could tell about it was the stunning statements that had got into the newspapers. Friend Jones kept still, however, and left us to find out as best we could what wonderful things our sturdy brothers in Canada could do when they got well worked up. Just here we began to wonder whether there were any better races of bees anywhere in the world than we had already. The Italians were a great advance over our common bees: what might others be? Frank Benton, from the Agricultural College, in Michigan, put his skill as a linguist with friend Jones's capital, and they two went on an exploring expedition to the Old World. Although some of us do not think the new races they sent home were any great improvement over the Italians, yet I think, dear friends, our thanks are due them nevertheless. They opened up bee culture; the new races demonstrated many new and wonderful facts, and gave us quite an advanced step in the way of queen-rearing.

Within the past year our friend Frank Benton has so thoroughly experimented on just what is needed for sending by mail, and has succeeded in bringing it to such perfection, that queens are now sent across the ocean in the mail-bags with comparatively few losses.

Again, the age became ripe for some improvement in the combs we began to handle so much; and different intellects throughout the land began thinking of combs made by machinery, more accurate than the bees could make them, and all worker combs instead of drone. Investigation showed that the Germans had been using something of the kind for twenty years or more; and, indeed, our friend Samuel Wagner had at one time made comb foundation, but let it drop, as he did the first numbers of the *A. B. J.*, for the good reason that the times were not yet ripe for it. When the time came, however, it sprang up with new vigor in different places. Our friend John Long, whom many of you may remember, and who, I regret to say, thought an assumed name to be better than his real one, began to send out little sheets of wax, impressed with cells. It was a success. I wrote to him to know how he made them, and he said they were made by a pair of plates, and that was why he could not furnish me sheets large enough to fill the Langstroth frame. I at once declared the article should be made by embossed rollers. Although this statement was given in print several months before my first pair of rolls were finished, nobody replied that rolls had been already in use. You know the result when I announced that it was a success. The rolls were honestly my invention, or at least they were made under my direction; but I have since been told that a poor German by the name of Weiss had a pair of rolls, and that the samples sent out by John Long were made on these. John Long said afterward that he told me they were made on plates, to keep the discovery a secret. Friend Newman in-

forms us that Mr. Weiss died in the poor-house.

About this time the queen-trade opened. The bee-keepers were so careless or so heedless that the P. M. G. ruled bees out of the mails. For some time the progress of our industry was seriously retarded by this ruling; for in consequence of it the express charges on a queen worth a dollar and a half were sometimes as high as two dollars and a half. For a while all efforts to get a reversal of this decision proved unavailing; but the times were ripe, and the wants of the nation demanded that queen-bees be permitted to go through the mails. The matter was taken up at a convention in Chicago, if I am correct, through the influence of the editor of the *A. B. J.* and Prof. Cook, including several other friends. To our great relief, our petition was granted. Prof. Cook made a visit to Washington to secure the desired end, if I am correctly informed.

Once more something more substantial for combs began to be called for. Wiring was tried, and a great many said it would not work. Finally Dr. Carlin, then living near friend Viallon, wrote me that fine tinned wire, about No. 30, would support the combs so they were comparatively secure from breakage, and yet they did not in any way interfere with brood-rearing. I found this to be correct by experiment, and now we sell tinned wire for this purpose in such enormous quantities that we purchased over a ton at one time last season. Dr. Carlin, I am sorry to say, was recently killed in an encounter with some ruffians in the far West.

The ripeness of the times just now seems to demand a reversible frame, and many busy brains are working the ground over and over. One sad part of it is, that a goodly portion of them are wasting time and talents in working *over again* the ground that has already been gone over; I mean the class who refuse to take a bee-journal, or who are not conversant with the contents of our back volumes. My friends, before you undertake to make inventions in bee culture—at least before you try to do very much in that line, get the old volumes of our bee-journals, and run them through to see if the subjects have not been thoroughly discussed and well gone over. See, also, the devices that have been pictured out, and may be afterward dropped.

We have now half a dozen or more journals devoted to bee culture. The *A. B. J.* has been for several years a weekly, and is ably managed by friend Newman, who is present with us to-day. Although there has been some fault-finding and complaining, and I fear, at times, a little jealousy, I believe when we get at the real truth of the matter we shall find that the world is large enough for us all. There is plenty to do, and plenty of room for all who are keeping pace with the times; for all who are ready to recognize the wants of the times, and bountiful harvests are in store for those who have proved, by years of holding-on, and faithfulness in what God has given them to do, that they are worthy of bountiful harvests.

We have reports of 500 or more pounds of honey from a single colony of bees; and our friend B. F. Carroll, of Texas and horsemint fame, is with us to-day. Whole apiaries of a hundred colonies or more have given an average of as high as 200 lbs. per colony. California has given us some of the finest honey in the world, and she has also produced it in such quantities that it is largely shipped clear across the ocean.

Is it not a fact, dear friends, that the achievements that have been made have been the result of the work of a "multitude of counselors," as in our text? and is it not likely, that, in the future, God's greatest gifts will be sent in reward for the combined efforts of many busy minds and busy hands? And in view of this, ought we not to exercise a brotherly kindness and charity to each other? Our thanks are due to the great Giver of *all* good, rather than to a single individuals.

In conclusion I want to say a word in regard to charity and kindness to each other. I want to encourage a little more that spirit which Paul describes in the three little words, "Thinketh no evil." I have recently gone over hastily the old volumes of the *A. B. J.* I have re-read some of my writings therein, and am very, very sorry, dear friends, that in my criticisms and reviews I was not more gentle. I am sorry I did not exhibit more of the spirit of kindness and charity. I am sorry, too, so many of us get a little spiteful and uncourteous because we have had different opinions on many things. At the present time I believe quite an unusual state of harmony exists between all parties. It is true, there has been some bitterness manifested, and some flings have been thrown out against supply-dealers—a class which I represent. May I be excused for saying a word just here, even though I *am* the proprietor of a bee-journal, and a supply-dealer? Very likely many of the friends prefer to subscribe for a journal published by one not in the supply business. If so, by all means do so. But, should we not accord to others the privilege of doing as they choose? It has for many years been the custom of class journals to deal in supplies for their special industry. Many of you are acquainted with these class journals, and have taken them, so you know how it is. Now, if there are those here who prefer the *A. B. J.* to GLEANINGS, I think I speak truly when I say I can shake hands with them just as freely, and feel just as kindly. Perhaps my peculiar way of conducting a journal is not to your liking. This would be nothing strange at all; and yet, is it not possible that I have my field for work, and in that field I fulfill the end for which God has intended me? Is it not providential that we are unlike in our tastes and dispositions, and in our views? And yet, dear friends, even though we do think differently, and see things differently, and have different tastes, can we not shake hands in spite of all these differences? And as we gather here from the North, South, East, and West, where the balmy air of the beautiful South blows over us, can we not lay aside these differences, and unite in one common feeling of thanksgiving to the great Father above, who

looks down with kindness and love upon us all?

POVERTY.

FRIEND HEDDON PREACHES A SERMON.

MY dear little boys and girls, do you think you are poor? Very likely many of you do, and have been guilty of sorrow and complaint because you were not as rich, and could not have many of the luxuries that you saw given to other little boys and girls. Did you ever notice that these luxuries do not give children any *lasting* happiness? Did you never notice that the children of those who have the necessities of life are rather happier than those who are presented with luxuries? I am now going to tell you a true story of my own experience that will show you what I mean by "poverty," and that *such* poverty renders happiness impossible.

I live in a small "city" of about 2500 people. About seven or eight years ago, just at the outer edge of town, about three-fourths of a mile from here, lived a poor family, of which there were three children—little Willie, about nine years old; little Mary, about seven years old, and a weak, tender little girl; then little Harry, about five years old.

One afternoon, when the snow was very deep and the cold intense, I asked a number of men in a store if they had heard of any of our town poor who were suffering during this severe winter. They all said no; but, one man added he thought that J. P., down by the river, must be pretty needy for the necessities of life. I went home. After supper, my old habit prompted me to take my usual walk; and, not having forgotten the poor family, I resolved to walk this mile and a half, through snow above my knees, and a temperature about zero. I reached the place just about dusk. The father was out by the door chopping some wood from a poor green log. I went on by, and waited till he got through and went in. I wanted to knock at the door and go in. I wanted to *see* the condition of the whole family. I then returned, and did so. The little house was old, poor, and cold. It consisted of one room of fair size, and a small bedroom and pantry off from it. These were the only rooms in the house. They had just one stove, an old cook-stove—no carpet on the floor; only three chairs in the house. The table was set for supper. Now, girls, you know just about how your supper-table looks, just as you are ready to sit down. Well, this one did not look that way. There were, upon the naked boards, just four old plates, and an old case-knife to each plate—just the eight, and nothing more. Both boys were "bare-foot." The little girl, Mary, had on some old shoes and stockings that no doubt had been cast aside by some one, as worn out. When I was offered a chair Mary had to get up, as there were but three chairs in the house. The little boy, Harry, climbed on to his mamma's lap to keep his feet warm. All hovered over the stove. All their clothes were scanty and poor. I could hear Mary and Harry, and once in a while Willie, keep up a continual teasing, but I could not hear what for. I thought they had put off supper because I was there. I saw no signs of any thing cooking or to cook.

I looked into a bedroom at my right, and saw one bed, poorly clothed, and that was where they all slept together. The teasing of the little children kept up, and pretty soon the mother said, "Pa, don't

you suppose the supper is done?" Then Mr. P. opened the door and looked into the oven; and as I sat just back of him, I looked in too. I saw a pie—at least I thought I did. Mr. P. moved it out, and broke off a piece of corn and water cake, and handed it to Mrs. P. to "try," to see if it were done. You know I told you that Harry sat upon his mother's lap. Well, just as she moved the piece toward her mouth, Harry grabbed it and ate it down before it could get time to cool or be tested. This was not polite or mannerly, was it? Do you blame Harry for this conduct, when he was so hungry? I didn't, and his mother did not seem to. Boys and girls, do you know that politeness is the product of comfort and plenty? Do you know that, during great privation, refined people become rude, cruel, and degraded? Did you ever think that, as long as we have poverty and suffering in our bright land, we shall have crime and wrongdoing?

This one little flat corn cake was the entire supper for the whole family of five. Well, I had seen quite enough. After asking many questions regarding their condition, I hurried home. As I entered the house my mother said, "Rev. Mr. Hall was going to preach his famous sermon at the Universalist church to-night; but I guess there will not be enough there to cause him to preach."

"Well," said I, "I am going over there to preach a sermon, and I guess there will be enough there for me."

I went there and found about twenty persons hovering over the register, and talking of adjourning. Nearly all of them were my acquaintances. I said, "Before you adjourn, would you not hear a short sermon from me?"

"Yes," "yes," "yes," said one and another. Then I got up on to a seat, and told them the story of my last two hours' observation. You never saw a more interested or distressed audience.

After the close of my story a committee was formed, and resolutions passed. The next morning I met Rev. Mr. Hall, with his arms full of loaves of bread. Meat, crackers, clothing, bedding, yarn, money, and other things, were begged; and before noon two cutter-loads of goods were taken to the house of that poor family, and it was hard to decide which were happier—those that gave or those that received. All were very happy; and, in fact, is there any other way that a rich man can get so much enjoyment from his wealth as to use it in relieving the distress of the very poor? I think not.

Some time we shall all discover that there is no true happiness for any, as long as one being is miserable. As long as a part are miserable, a part of each one's life will be unhappy. There is that relationship existing between us all. Never think that you can get happiness from an act that makes some one else unhappy. That has been tried millions of times, and always failed. I hope you will think of my story and these children when you are heavy-hearted because you are not better off. I hope that when you do think of them you will look about and see if you can not find any little sufferers in your own neighborhood. If you do, go right about assisting them. All good people will help you, and you will enjoy the labor better than any other in the world. Some one to start the good work is all that is needed.

JAMES HEDDON.

Dowagiac, Mich.

Friend H., there is one point where you make me a little uneasy in your story.

When you told how you found that family, I wanted to hear you say that you carried them some food right off that night, without waiting for next day. It seems to me I should have felt just like running all the way home and back again. And now I will tell you what more I should want to do. After their immediate necessities were supplied, I should want to find out what the father could work at, and give him some work; and possibly the mother, too, might find some sort of work that could be done at home; and I think all parties will feel a great deal better in such cases, if assistance is given in some way that will enable them to help themselves. Carrying a family through the winter by repeated donations of money or food is always apt to educate them into the habit of being *dependent* instead of *self-sustaining*, as every human being ought to be encouraged to be, if it is a possible thing.

AUNT VIC'S TOBACCO-STORY.

A TRUE STORY FROM REAL LIFE.

THE "tobacco question" has been pretty thoroughly discussed in GLEANINGS; but as I have never added my mite in that direction I will do so now, and will write to the little folks this time, and it shall be a "true tobacco story" that I tell you.

Mrs. Lee and her two children were visiting at Mrs. Benedict's, Mrs. Lee's sister, who lived on a farm a few miles out from Rochester, N. Y.; and as the little Lees had never lived on a farm, nor known much of farm life, of course the surroundings were all a novelty; and one thing that they enjoyed best of all was to climb to the top of the stone wall that ran along the orchard, and watch the canal-boats as they passed by on the Erie canal, that ran along the east side of the orchard. The children were never weary of watching the horses as they trod step by step the well-worn path.

One morning when the children woke up it was raining heartily.

"Oh dear me!" said Kitty; "I just think it too bad to have it rain to-day. Annie and I wanted to go and gather chestnuts." And Kitty hopped to the window, with one stocking on.

Mrs. Lee turned from the glass where she stood pinning on her collar, and said, "Kitty, my daughter, never forget who sends to us the rain as well as the sunshine."

Kitty winced; she felt quite ashamed of her mother's reproof.

After breakfast, Kitty and her cousin Annie went up into the wood-shed chamber where Annie had fitted up a playroom. This left Willie alone down in the dining-room; and as he stood at the window flattening his nose against the glass he could see the two hired men, August and Charley, who were thrashing beans out on the big barn floor. Presently Uncle Jake came in, and, lifting Willie up and setting him on his broad shoulders, carried him out to the barn that he might see them use the flail. This was fun for Willie. He watched them use the flail, then scoop up the beans and run them through the fanning-mill. It was warm work for the boys. They had taken off their coats and jackets, and hung them up. Once when they stopped to rest awhile, August went to his jacket and took from one of the

pockets his tobacco-box, saying to Charley, as he handed him the box, that it was the sweetest tobacco he got down to Smith's the other day, he ever tasted. Wouldn't Charley have a chew? Charley shook his head, for he had not yet tasted the sweets of that "delicious weed." Willie turned squarely around, expecting that August would ask him to take some, but August didn't. After taking out a chew he put the box back, and, shouldering a bag of beans, told Charley to take the other and they would carry them to the granary.

"Sweetest tobacco he ever see," Willie thought to himself. "Well, he's real mean, and stingy too, not to offer me a taste, when I's company too."

Willie looked up at the jacket; there, right in plain sight, was the corner of the box sticking out of the pocket. "I can get it easy as nuffin'," suiting the action to the words. He climbed upon the fanning-mill, and, taking the box out, he hastily transferred some of that "sweet" tobacco to his mouth. He jumped down, and, going to the barn door, saw August and Charley coming back. The tobacco made his lips and mouth smart and tingle; he thought he could swallow it, and thus get rid of the delicious swig. He undertook to do so. Oh how his mouth and throat did tingle! So he spit the rest out, and, wiping his mouth with the sleeve of his apron, thought August didn't tell the truth about that tobacco.

When the dinner-horn blew he rode to the house on August's shoulder. August carried him to the dining-room door, and stood him down on his feet. Aunt Lizzie had a fire in the room, and Willie, being somewhat chilly from standing out in the barn so long, drew Annie's little chair close up to the stove, and sat waiting for the girl to dish up dinner. The warm room and the smell of the dinner made him very sick. Aunt Hannah was the first to notice how very pale he was, and asked, "Why, Willie darling, what's the matter?"

Willie's head grew very giddy, and he came near falling, when Uncle Jake sprang up and caught him in his arms and carried him into the sitting-room and laid him on the lounge. Mamma, Aunt Lizzie, Aunt Hannah, all followed after him. Willie commenced vomiting. What an excitement! Mamma flew around for the peppermint; Aunt Lizzie for the camphor-bottle, and Aunt Hannah for hot water. Willie swallowed the peppermint, but it did not make any difference; vomit again, and, oh so sick and pale! Aunt Lizzie mixed camphor and warm water for him, but that didn't do any good. It was evident that Willie was very sick. Mrs. Lee was getting very nervous. She bustled in and out, though nobody knew what she was doing—herself least of all. Uncle Jake stood by, looking very anxious and helpless; then muttering something about "fooling away time" he rushed into the hall, and, seizing his best overcoat instead of his oil cloth, rushed out in the pouring rain to the barn, and in less than a twinkling, Black Prince, his famous trotter, was going at the top of his speed toward Rochester, scattering the geese out from the mud-puddles in the road, and, utterly regardless of the yelping curs that flew out at his heels, soon reached Dr. Arnold's office. When Uncle Jake drove up, the doctor was just preparing to go out for his afternoon calls. Yes, the doctor would go, for there rose up before his vision a long doctor-bill, which he would have the pleasure of presenting to Mr. Benedict.

"Child sick; company, eh?" and a long string of questions that Uncle Jake didn't hear, for he was turning his horse for home, and close behind followed the doctor's horse.

Willie was looking very pale and ghastly as the doctor entered the room, and, going through the usual examination of tongue, pulse, and head, he looked puzzled, and asked Mrs. Lee what Willie had been eating. "Nothing more than his usual food;" but Willie might have enlightened him, if he had tried, but he didn't. The doctor mixed a large powder for Willie, which didn't taste any better than the sweet tobacco, Willie thought. The doctor told Uncle Jake that he thought the child had taken poison.

"Impossible," said Uncle Jake, turning very pale. Willie's mamma did not hear; if she had, she probably would have fainted.

"Clear case," replied the doctor; "but I have given him a powerful emetic, and will wait until it takes effect."

Willie vomited again.

"What's that?" said Aunt Lizzie, as she wiped off some tiny black specks from the pillow-case. Mamma, doctor, Uncle Jake, and Aunt Hannah came to see. They made such a stir that Willie lifted up his head to look too.

"Why, that's nuffin' but sweet tobacco," he said. Then his mamma went to inquiring, and they soon found out all about August's sweet tobacco.

"Clear case this time," said Uncle Jake, laughing heartily, as Willie told his story. Dr. Arnold buttoned up his oil-cloth coat and pulled on his gloves, and went home through the pouring rain, his vision of a long doctor-bill entirely disappearing.

After the emetic took effect it was astonishing to see how fast Willie grew better. He is a young man now, and does not smoke or chew, and says he had all he ever wanted of tobacco in that one chew of "sweet tobacco," and I think it is a great pity that more do not try a good dose in their first attempt—enough to sicken them ever after at the thought of the filthy stuff. AUNT VIC.

Rockton, Ill.

WALTER'S STORY ABOUT THE FRUIT-TREE AGENT AND THE BEE-HIVES.

A 12-YEAR-OLD BOY TELLS US HOW TO MANAGE WHEN A RUNAWAY HORSE GETS LOOSE IN AN APIARY OF 300 COLONIES.

I NEVER tried to get any thing without paying for it; but I should like to have Ten Nights in a Bar-room to read, and I am terribly scant of cash. One year ago last summer there came a fruit agent here from Nashville, to sell pa some fruit-trees, and that fellow didn't have a drop of bee sense. Pa has his apiary inclosed with barbed wire, about two acres inside. That fruit agent drove his buggy up to the big gate, and tied his horse to one of the posts, within ten feet of where the bee-stands were, and he went into the honey-house where pa was uncapping honey, for we were extracting then, and he was admiring every thing, calling pa the biggest bee-man he ever saw. He wanted to sell him some fruit-trees, you know, when one of the black boys who was bringing in honey screamed out, "The bees are stinging that horse," and none of us in the honey-house knew where the horse was; but we looked out, and that horse had broken loose from the post, and was

coming inside with his buggy, and he turned right in among them, knocking the hives over with his buggy-wheels. The bees just covered him, and he did his very best to get under the ground, till he got one of his buggy-wheels hung around a post, and could not go any further, so he lay right down. We happened to have two large Bingham smokers in full tune, and pa got on his bee-hat and gloves, grabbed a smoker, and called for the black boys with the other smoker, and they came to the rescue like heroes. It took a hero to go out there, 300 stands of bees settling with a horse and buggy. I stayed in the honey-house (you bet I did). The fruit agent went out with his hat off, but soon retired from the scene of action, regardless of ceremony. Pa and the black boys covered the horse with smoke, cut him loose from the buggy, got a rope around his neck, but he lay so still they thought he was dead; but as they pulled his head toward the gate, and came down on his back with a stick, he arose running, and went out at the gate and ran a mile through the corn, and lay down. By evening the horse was better, and pa tied the harness, and the man left. He offered to pay pa; but as pa wouldn't have any pay, he made him a present of some strawberries, which he was to send him the next winter. But that was the last we knew of the man or the strawberries either. It took lots of smoke to persuade the bees that they ought to be straightened, and they didn't want any more foolishness, and so they fought like tigers.

WALTER MARTIN, age 12.

Benton, La., Jan. 24, 1885.

Well, Walter, if you never tried to get any thing without paying for it, I do not believe you have this time, for your story is certainly worth any book in that wheelbarrow full. It is really too bad to think what troubles the poor man had when he came to see you, so pleasant and smiling. I am very sorry he got into trouble, but I don't suppose it can do any particular harm if we laugh just a little. The vivid way in which you tell of the transaction would do credit to a veteran story-teller. I hope you will give us some more letters, Walter.

MISSIONS IN INDIA.

A LETTER FROM ONE OF OUR FORMER OFFICE GIRLS.

DEAR JUVENILES:—The last time I wrote you 'twas on the subject of missions, in which I am greatly interested; and as I have listened to-day to Mrs. Alexander, a lady who, with her husband, has been laboring in India since 1865, I am going to tell you something she said about the Hindoos.

The only god they accept, you know, is represented by great wooden idols, built by their own hands; and their belief is, that after death their souls enter the body of some animal, either the cow, oxen, monkey, or snake. Isn't that dreadful? In consequence of this, none of these animals are ever killed, and Mrs. A. says the reptiles are growing so numerous that, in 1883, 20,000 people died from the effect of snake-bites; the monkeys are so plentiful and so mischievous that property is being continually destroyed by them.

One old gentleman met her one day and mourn-

fully told her that they were tearing all the tile from the roof of his house. "Why don't you kill them?" she asked; but he gravely replied that he might be killing his *own brother*. Isn't that funny? You wouldn't stand back for relationship's sake, would you, my little men, if a snake should cross your path? Just think what these missionaries who go out there so gladly to do the Lord's work have to bear, and how patiently they do brave all dangers for his dear sake. They don't mind such little annoyances as lizards scampering over the walls, and dropping, occasionally, on their heads below. In fact, they rather welcome them, as they eat the flies; but the terrible cobra de capello, scorpions, centipedes, are tough citizens to deal with.

Among other troubles they have smallpox all the year round, and nothing is done by the natives to stop its spreading. In their ignorance and superstition they believe that it is some punishment sent on them by their gods for certain misdeeds, so nothing is done for their sick and suffering, except, in occasional circumstances, throwing ashes over them when the dreaded itching begins.

Mrs. Alexander, who speaks and sings their language beautifully, says that, when she enters the huts of some of the villages for Bible-reading (especially where she is not known), it is not strange to be surrounded by fifty women in a few moments. Mother Eve's failing is predominant, even here. They examine herself and apparel closely, and ask numberless questions as to the race she represents.

It is no light work, here, dear little friends, for either man or woman to come boldly out on the Lord's side; for when one accepts the Savior here he has to give up mother, wife, children; in fact, every thing which goes to make life here happy; for when a Brahmin once loses caste, as he does when he espouses Christianity, he is dead as far as his family is concerned. Little girls are betrothed here at four and five, and married when ten and twelve years of age. Mrs. A. told of one little married lady, about 14, who, while home on a visit to her mother, was converted. When she returned to her husband they commenced persecuting her—accused her first of theft; they tested her innocence by holding her feet over the live coals until they were blistered. As she had nothing to confess, even then, they gave that up; and as her husband died shortly afterward, she was accused of poisoning him. In fact, she was persecuted so that she fled to the Christians for refuge. Eventually she married one of them, and is now one of the most efficient workers in the corps.

Mrs. A. closed her discourse about this good work, with an appeal for prayers and what material help could be given. Dear little friends, do you realize how the missionary pennies you give in, Sabbath after Sabbath, help? Let me tell you what we are doing in our Sunday-school. Every child who will pledge himself to a penny a week is given a bank to take home with him, and last Sabbath the banks which were called in, after being out ten weeks, yielded about \$20.00. Doing pretty well, isn't it? The banks were then given out again. I have nine little boys in my S. S. class, and some got quite interested in trying to see if they couldn't have more in their banks, when added up, than their teacher had, and I am not so sure but that they succeeded. Do you like the idea?

Washington, D. C., Feb. 5, 1885.

And so it is true, dear old friend Bess, that

BESS.

you have actually become a teacher in the Sunday-school, and have nine little boys in your charge. As I read your letter my mind goes back to the mild, demure-looking little girl who came to me years ago, and asked for a place. In due time that meek childish form grew larger and stronger, and Bess became a power in our business, and now she is beginning to be a power in the army of the Lord, unless I am greatly mistaken, and for the same may God be praised.

MORE ABOUT GUNS.

SOMETHING ON THE OTHER SIDE OF THE QUESTION THIS TIME.

I SHOULD like to tell Mrs. Chaddock, that if her "big boy" has had the "bringing up" which we may reasonably suppose she has given him, she will not regret satisfying his desire for a gun. I have no boys, but I was a boy myself not many years ago, and am still fond of a gun. It is a very useful instrument, when properly used, and on a farm it plays an important part in the destruction of skunks, hawks, and "sich like varmints."

A boy who aspires to be a gentleman will be one in the use of his gun; not only in avoiding the wanton destruction of God's innocent creatures for the sake of killing, but in the matter of frightening his nervous mother and sisters. I think girls as well as boys, should be carefully taught how to use a gun; not only for the practical benefit they may derive from it, but for their feelings as well. The nervous apprehension at the presence of a gun will disappear with a practical knowledge of the use and care of firearms. In their use, however, the observance of the following simple rules should be insisted upon:

1. Remember a gun contains elements of danger, and must be handled with a firm hand—not with the tips of the fingers, just ready to drop it.
2. Never point a gun, loaded or otherwise, at any person.
3. Never lean a gun against the wall (unless in a corner) or leave it in any other position where accident may cause its discharge. Have a dry place to hang it, in the house, and keep it there when not in use.
4. In practicing, never place a target on any building, but in open ground, where you can see beyond it, at least as far as the shot are likely to be thrown—say 20 or 30 rods, if you are using a shotgun.
5. Kill only such birds and animals as are unmistakably injurious when alive, or of some use when dead.

A young beginner should take his (or her) first lessons from some careful and at least moderately skillful person.

BURDETT HASSETT.

Howard Center, Iowa, Feb. 24, 1885.

Thank you, friend H. If our boys or girls must have guns, I hope they will observe the rules you give; but I confess I should be better pleased if they did not care for them. Ernest has a gun, and sometimes it seems to be handy; but I do not believe it is called into requisition in our locality more than once in a year. When I read of the accidents that are happening almost contin-

ually with firearms, I can not help concluding that, as a whole, their convenience does not make up for the harm they do; but, of course, I may be mistaken.



Every boy or girl, under 15 years of age, who writes a letter for this department, CONTAINING SOME VALUABLE FACT, NOT GENERALLY KNOWN, ON BEES OR OTHER MATTERS, will receive one of David Cook's excellent five-cent Sunday-school books. Many of these books contain the same matter that you find in Sunday-school books costing from \$1.00 to \$1.50. If you have had one or more books, give us the names that we may not send the same twice. We have now in stock six different books, as follows: viz.: *Sheep Off, The Giant Killer, The Roby Family, Rescued from Egypt, and Ten Nights in a Bar-Room.* We have also *Our Homes, Part I.* and *Our Homes, Part II.* Besides the above books, you may have a photograph of our old house apert, taken a great many years ago. In it is a picture of myself, Blue Eyes, and Caddy, and a glimpse of Ernest. We have also some pretty little colored pictures of birds, fruits, flowers, etc., suitable for framing. You can have your choice of any one of the above pictures or books for every letter that gives us some valuable piece of information.

"A chiel's amang ye takin' notes:
An' faith, he'll prent it."

WHEN in New Orleans we secured lodgings with a widow lady, where we had been directed. As we left early in the morning for the Exposition grounds, and retired late in the evening, we did not get much acquainted with the family. One evening, however, just as we were getting ready to retire, I got to thinking about Huber, and began to be almost homesick, as I imagined that just about that hour he would be teasing for his papa. All at once a babyish voice, sounding not unlike his, caught my ear, from the next room. I listened, and felt a great longing to get hold of the little one. Ernest, however, declared it would be taking a liberty—that they were strangers, and it was late, and so I went to bed without getting hold of the baby; but his childish prattle pulled at my heart-strings every time he spoke, so I could not go to sleep. It was the same next night, and I began to feel as if I could not stand it much longer, unless I could have that baby in my arms. Next day we were obliged to be in the vicinity in the middle of the day; and as we came into the front yard, there among the violets (you know they are in bloom in New Orleans in March) was a pretty, sweet-looking little girl, and on the steps was the mamma with that "said baby." It was not the lady of whom we engaged the rooms, but a younger woman; and although I was a perfect stranger I stepped over the rules of etiquette, and begged for the baby—and I got him too. He seemed as glad to see me as I was glad to see him, and in a little time he got his soft fingers in my whiskers,

and the other hand a hold of my ear, and then he got his little mouth up against my cheek, and in a regular baby fashion showed his appreciation by trying to put me in his mouth, as if I were something good.

My little friends, that baby was to me like a good big dipper full of cool spring water to a thirsty laborer. Perhaps I looked my inquiry, for pretty soon the mother replied that baby's papa was dead. Poor little "Jules"! Was it possible that his little mind imagined that it was his real papa who hugged and kissed him, and talked to him? The little girl came up; and as I shook hands with her, and talked with her, her mamma told her to tell us where papa was. A sober look came over her pretty childish face, and she raised one little hand above her head as she replied, "Papa gone way up, heaven." In an instant a picture came before me of little Huber pining for his papa, who could never come back in *this* world. It would be no harder for him than for thousands of other little ones who have to go through life without a father's love.

Now, my little friends, if your papa is where you can see him and love him every day, will you not remember to thank God for it, and remember poor little Jules; who has a mamma to love, it is true, but can never see his papa, even though he grows to be ever so old?

A TEACHER WHO TREATS.

I take the opportunity of writing you a letter. We sold 75 lbs. of honey this year. We have three hives. Honey is 15 cents a pound here. It is very cold to-day. I go to school. The teacher gave us two weeks' holidays. He is going to treat his pupils the last day.

EDDIE ORRELL.

Vernon, Ind., Feb. 8, 1885.

25 LBS. PER COLONY FOR WINTERING.

Pa has 17 colonies of bees. One hive of bees swarmed twice, and he separated them each time. We did not have as much honey last year as we did the year before. We always winter them on their summer stands. We pack them in chaff, and they live through the winter. They eat about 25 lbs. of honey through the winter. F. C. BENNETT, age 11.

Acushnet, Mass., Feb. 9, 1885.

COUNTERFEITING COMB HONEY.

My father has 24 swarms of bees. My uncle, Stephen Rifenberg, has 40, and makes lots of honey. We have had some very cold weather, 37° below zero, and deep snow. Can any one make counterfeit comb, and fill it with honey so that it can't be detected from genuine honey?

JOSEPH H. SNYDER.

Corey, Mich., Feb. 28, 1885.

No, Joseph, nobody can make comb honey, and it is a shameful piece of falsehood for the newspapers to take it up and keep passing it along as they do.

TENEXINE.

Did you know that tenexine was good to mend dishes with? Ma says that it is the best thing to mend them with she ever had. Pa's bees have been confined for quite a long time without having a flight. I wish it would be warm a few days, so they could come out. I helped my sister gather Osage-orange leaves for the silkworms. We got awful

tired of it. They ate whole heaps of them. Ma had to make us go sometimes. We attend to them in partnership.

HERBERT DYKE.

Pomeroy, Ohio, Feb. 2, 1885.

AN 8-YEAR-OLD PARTNER.

My Uncle George has 60 colonies of bees. He calls me his partner, and I help him take off honey. The bees had a nice fly last Friday, and uncle says they are in fine shape. My pa is helping him build 100 chaff hives for a man in Ohio.

GEO. D. HILTON, age 8.

Fremont, Mich., March 2, 1885.

Well, George, that is pretty good, if you have got an order for 100 chaff bee-hives from a man who lives in Ohio. I admire your energy and zeal. I hope Uncle George will prosper. I suppose when you hang out your shingle it will read, "Uncle George & Co.," and of course you will be the "company."

CLAUD AND HIS MOTHER.

I am a little boy 11 years old. My ma keeps bees; she has two stands. She had 4 stands last fall. She has two Langstroth hives; two swarms died. Ma said they starved to death. They were in the old box hives. I have a Texas pony. I ride it. I go to school. My pa has 6 horses. We have some lambs that look like rabbits, all but the tail. This winter I embraced religion. I joined the Baptist Church.

CLAUD H. SMITH.

Boonville, Ind., Feb. 23, 1885.

So, Claud, you are a member of the Baptist Church, are you, even though you are but eleven years old. Now, my young friend, whatever you do, or whatever you forget, do not forget you are a church-member. Keep the thought constantly before you, and let the world know that you realize what it is to have stood up before men and profess to be a follower of the Savior.

A LOST PENCIL.

The other day Buddie brought some hay from the store to feed our old cow Lily; and as we were giving it to her my little sister Effie spied this pencil. On inquiry the hay was out of a barrel that my pa received from you, in which were packed smokers, a comb-bucket, and other tinware, and we supposed whoever put the things in the barrel lost his pencil, so here it is all the way back from Texas. My pa has 34 stands of bees; sister Alice one, and Buddie one. They commenced bringing in pollen on the 1st of February (on Sunday); was that wrong?

LIZZIE L. MULLIN, age 9.

Oakland, Texas, Feb. 25, 1885.

Many thanks, Lizzie; and although none of our clerks can remember of having lost such a pencil, we know you mean to be honest. That is right. Even in little things we should make it a point to keep nothing but what is justly our own.—Bees are not rational nor responsible beings, and therefore they can not do wrong, as little girls can; and herein is the difference between humanity and the lower animals. "The Sabbath was made for man," and not for bees.

A SHORT LETTER.

Pa has 2 hives of bees. One bee stung him on the hand when he was smoking them last summer. I like honey very well. I go nearly every day to

school. I read in the Fifth Reader. I have three sisters, younger than myself. LILLY WHITE.

Columbus Grove, Ohio, Feb. 20, 1885.

A GOOD REPORT FROM A YOUNG BEE-KEEPER.

I bought one hive of bees last spring. They swarmed five times. Two went off, but I saved 3. I sold one to my brother, and one to my sister. I got no honey. They are all in box hives, but I intend to try the Langstroth hive next summer.

SELBIE D. GROVE, age 14.

Pewamo, Mich., Feb. 18, 1885.

THE JERSEY HEIFER.

Pa has 65 stands of bees. We live on a farm a mile and a half from Cumberland. We have 48 acres of land. I go to school. I watch the bees in summer, and I get five cents a swarm. I am named after my father. We have a good many strawberries. We have a Jersey heifer.

THOMAS FOOTERS, JR., age 10.

Cumberland, Md., Feb. 3, 1885.

THAT CROSS MAN.

My father has no bees, but I am going to write a letter. I have lots of pigeons, and some cats. There is a man at our house, and he is as cross as a bear. If I go in the barn he will come and drive me out. We have had good skating here all winter, but I have no skates. Little Huber would like to be here to slide on the ice, I think. DANNIE McCORMICK.

Cameron, Pa., Feb. 11, 1885.

So, Dannie, you have a cross man at your house, have you? Well, now, I have noticed that wherever there is a cross man there is almost always something else. Shall I tell you what that something else is? Well, I suspect it is a mischievous boy, and I shouldn't wonder if his name is Dannie McCormick.

A DANGEROUS KIND OF SPARKS.

Pa takes GLEANINGS. I read how Mr. C. F. Atwood set his bees afire with the sparks from his smoker. Pa puts green grass in the top of the smoker, so as not to let the sparks fly out, and by so doing is never bothered with sparks—only around my elder sister. Pa has a draft in the bottom of his smoker. Our bees gathered lots of honey from red raspberries. They are quite numerous here, and make very nice honey. GENEVIEVE HILL, age 10.

Randolph, N. Y., Feb. 8, 1885.

Now, my little friend, suppose your elder sister should happen to get her eye on this letter: wouldn't she just "go for" you?

FROM A YOUNG BOOMHOWER.

I am a little boy 6 years old. My name is Novice Boomhower. I was named after you. My pa keeps bees, and I am going to be a bee-keeper too.

NOVICE BOOMHOWER.

Gallupville, N. Y., Jan. 6, 1885.

Right welcome you are, my young namesake. And so it is indeed true, that since the time I called myself Novice, a boy has grown up and written a letter. We know all about your papa, for we have seen a picture of his apiary.

HARVEY'S AGE, AGAIN.

My papa has 35 stands of bees living; 20 have died. Some had too much bee-bread. Pa thinks that killed them, as some of them left considerable honey.

We got 1500 lbs. of comb honey in one-pound sections last summer.

Harvey Baer, I guess you are 12 years old, but you stated your example wrongly. You should have said, "My age, minus $\frac{1}{2}$ of my age, minus $\frac{1}{4}$ of my age, equals 3." MELLIE McFATRIDGE, age 11.

Deer Creek, Ind., Feb. 3, 1885.

A WET PLACE FOR BEES.

My pa started with two old moth-eaten bee-gums year before last, and now he has got 23 hives from them, and would have had a good many more if the moth had not killed them out so much. It overflows where we live. We live on Red River. My pa has to put his hives up on benches to keep the water from drowning them out. Pa is afraid of bees, and I have to work with them a great deal. We got 500 lbs. of honey last year. JOHNNE DUDNEY, age 14.

Collinsburg, La., Jan. 28, 1885.

ABOUT THE SILKWORMS.

I will tell you about my silkworms. I bought 1000 eggs; about the first of May they hatched, and they looked so little. They were black, but began to change color, until, at the last moult, they were of a light yellow. The Osage orange grew close to our house. Ma said when they were fed they sounded like snow falling, so many of them chewing. It was the nicest time of all to see them spin. They made nice yellow cocoons. I sell eggs.

ETHEL DYKE, age 11.

Pomeroy, Ohio, Feb. 2, 1885.

TACKING BEES IN THE HIVE.

My father has five colonies of bees. He bought them last fall. He put them in the cellar, and tacked wire cloth over the entrance of the hive, to keep the bees from coming out. He does not intend to shut them in the hive next winter, because they crawl down against the wire, and die, and it is a great deal of bother to get them out. Our bees are hybrids, and they are very cross.

ELVIS H. HOLLOWAY, age 13.

Rolling Prairie, Ind., Feb. 7, 1885.

RABBITS AND OPOSSUMS FOR FOOD.

My father takes GLEANINGS, and thinks it is "just splendid." He has six colonies of bees, but they did not make much honey this year. I have two brothers and two sisters. I like to read the young folks' letters very much. I have two birds, Betsey and Chip; and I have a dog named Shep. When the snow is on the ground he and myself go out and hunt rabbits. I like rabbits, don't you? and opossums too. They are just splendid—to eat, I mean.

MABEL C. COTTON, age 11.

Wabaunsee, Kan., Feb. 6, 1885.

HOW THEY CAUGHT THE SWARM.

We have a swarm of bees. The way we got them was this: One day a playmate of mine and myself were playing, when I heard a humming noise, and, looking up, saw a swarm of bees flying over. We beat on old cans, and any thing we could get hold of, and at last they settled on a tree just outside of our yard. Then going into the house I told my mother, and she went out and helped us fix a box for them. Then we put a sheet on the ground, and put the box on the sheet, and then shook the tree, and the bees fell on the sheet, and went into the box, where they have stayed two years without swarming.

ELMORE WILSON.

Allerton, Wayne Co., Ia., Feb. 13, 1885.

THOSE THREE SWARMS—SEE PAGE 852, 1884.

I will try to explain about those three swarms of bees. The first swarm went into the house between the floor and plastering, about 4 o'clock Saturday evening. On the following Monday, about 10 o'clock another swarm came out and went in the same place, and about 3 o'clock in the afternoon of the same day another small swarm went into the same place. This was in the swarming season. My uncle lives in town, and does not keep bees. My brother sends a package of seeds. He wants to know if they are the seeds of any of the family of purple fireweeds.

PERLY CRANSTON, age 13.

Woodstock, O., Jan. 11, 1885.

We can not name the seeds you send, friend Perly, but will plant them in the spring. They are larger than the seeds of the fireweed.

HOW HARRY'S MOTHER INTRODUCES QUEENS.

My mother keeps bees. She gave me a swarm my birthday. They made me about 75 lbs. of honey last season. My mamma does not have to cage queens to introduce them, unless she is in a hurry, for she knows just when they will take a queen. When they have young eggs in the hive they are quite independent, and will not accept a queen unless she is caged. Mamma put one queen into five hives, and did not cage her once, and she also took two black queens from two hives standing near each other, and changed them right off, and the bees did not know the difference. Mamma can't change queens unless they are of the same color. She takes GLEANINGS.

HARRY B. HENDERSON, age 11.

Wayne, Mich., Jan. 11, 1885.

LIZZIE'S REASONS FOR USING DOUBLE-WALLED HIVES.

I go to school. I have one brother who has 7 stands of bees. My grandpa has about 60 hives of bees; he attends the county and State bee-keepers' meetings. He uses brick hives two stories high, with a double wall, having one inch dead-air space between the walls. He uses the L. frame, and has room for ten above and ten below. He says they are warmer in winter and cooler in summer than the other hives.

LYDIA J. DAVIS.

North Salem, Ind., Jan., 1885.

Well, Lydia, you have got hold of a great truth that seems to puzzle many of the veterans; and that is, that a properly made hive, protected by chaff or otherwise, is as efficient in keeping out the great heat in summer as it is the severe frosts of winter.

SHOOTING A DEER, ETC.

My pa had 17 swarms last fall; four of them are dead now; two of them he got from you last summer. There are no other bees near where we live. Pa says the drones can not feed themselves. He says, when the worker-bees do not want them any more they do not feed them; and when the drones are almost dead the bees lead them out and they soon die. Pa got \$20.00 worth of honey from one swarm, in one-pound sections. They were black bees.

Pa and I were up in the woods last summer, and killed a deer. It was a small one. Pa carried the deer and I carried the gun. The mountains are high here, and we get lots of berries.

GEORGE M. WYKOFF, age 10.

Cameron, Pa., Jan. 7, 1885.

THE WAX-PLANT.

I and my little sisters help mother churn, and help father extract honey. Our aunt has a wax-plant which has pretty white flowers. They yield so much honey that, during the night, it drops on the floor. Father has been taking GLEANINGS for seven or eight years, and we like to read the little folks' letters.

NANNIE S. CLEMENTS, age 9.

JANIE'S LETTER.

Father has 49 hives of bees, Italians and hybrids. I should like to see Huber and Blue Eyes, and skate on your carp-pond. We do not often have ice thick enough to skate on. I have a pet cat named Tabby. Father wrote these letters for us, as we were afraid you could not read our writing.

JANIE M. CLEMENTS, age 7.

Dalton, Ga., Feb. 2, 1885.

FEEDING THE BIRDS; BEES ON BURDOCKS, ETC.

Papa has 83 colonies of bees packed in chaff on their summer stands. My sister Lucy and I nailed a good many section boxes last summer, but the bees did not gather any honey, so we did not use them, and papa had to feed the bees three barrels and a half of sugar.

We have six pullets that were hatched the last of June, 1884, and they have already laid nine dozen eggs.

There was a patch of burdocks back of the barn that the bees seemed to be busy working on all the time the weeds were in blossom.

Papa scatters wheat around for the snowbirds, and they come every morning to get something to eat.

ALICE HURBUT.

West Bethany, N. Y., Feb. 21, 1885.

THIEVES IN THE APIARY—GOT 'EM!

Last summer, thieves got in our apiary three times. The first time, six boys came with a wagon and got about 75 lbs. of honey. The next day we fixed a tent so that we could stay out all night. The next night father and I were in the tent when the thief came and began to lift the bee-hive cap, when father heard him and threw a rock. It hit a board in a fence by him, and one of the thieves (there proved to be two), while jumping through the wire fence, caught his coat and tore a piece of it off. We made no effort to find out who these boys were, but in the course of a month or two they came and offered to pay the damage. Father accepted the offer.

LUKE LINDLEY, age 9.

New Providence, Iowa, Jan. 25, 1885.

Well, Luke, it seems to me as if a wire fence were a pretty good thing to have, does it not? That bit of cloth probably did the business. A detective would by the aid of it find the boy pretty surely. It seems to me the boys must be pretty bold in your locality, if they get so that they come six at a time, and with a wagon. I hope it will be a lesson to them.

THE LIGHTNING CALCULATOR.

I go to school, and study reading, writing, spelling, and arithmetic. I can add an example containing six columns of seven figures each, in 24 seconds.

FROGS.

I caught a frog last summer, and I examined his mouth, and found that his tongue, unlike that of other animals, is attached to the fore part of his lower jaw, and extends down his throat. They live on flies and bugs. When they want to catch one they throw their tongue out, and then the fly sticks

to it, and then they draw it back in. All this is done with the rapidity of lightning, apparently.

JEROME COON, age 12.

Hayfield, Crawford Co., Pa., Feb. 5, 1885.

Many thanks, Jerome, for the fact that you give us in natural history. I presume when the frog wants his long tongue out of the way, he just swallows it; is that what you mean? I wonder if Prof. Cook knows this about frogs.

DEATH OF THE IMPORTED QUEEN.

Pa has about 100 hives of bees. He got about 4000 lbs. of honey from 60 hives. He gets 12½ cents for comb and extracted honey, and 18 cents for section honey. The best honey-plant here is the horsemint. About two months ago ma went out into the apiary, and found our imported queen dead. We had been raising queens from her, and pa left off the lid, and the mean robber-bees robbed it. Don't you think they did a mean thing? O. H. BROGDEN, age 10.

Bryan, Texas, Jan. 11, 1885.

It seems to me a little mean to think robbers improve every such opportunity, my young friend; but I guess most of the fault belongs to your father for forgetting to cover the hive. It is pretty sure death to a colony, to forget and leave the cover of the hive off when robbers are troublesome, and your letter is a good reminder.

THE CHRISTMAS-TREE: TOADS, ETC.

My grandpa takes GLEANINGS, and I like to read the letters in it from the young folks. It makes me feel acquainted with the boys and girls who write for it. We are having vacation now. Our school closed just before Christmas. We went to school the last day, and were all very much surprised to find that our teacher had a Christmas tree for us, with presents for every one. It made us boys, who had been troublesome, ashamed, and we are going to try to do better next term. We have got for her a copy of Longfellow's poems, and are going to put it in her desk. We are in hopes that she will be as much surprised the first day of the term as we were the last.

My grandpa's bees have all gone to sleep for the winter. I was reading in GLEANINGS a letter from Charles Leyvraz, about skunks eating bees. Bees have a great many enemies, but I did not know before that skunks are one of them. Our bees are troubled by the toads. They will go up to the hive, and when the bees come out they will stick their sharp tongue out so quickly that the bees do not have time to sting them. Sometimes we could see half a dozen toads by the hives, waiting for the bees to come out. At night, and after a shower, we had to put boxes up beside the hive. A. POWERS.

Woodstock, Vt., Jan. 10, 1885.

PENNING UP RABBITS, ETC.

My pa keeps bees. He has been at the business two years, and he likes it better than any thing he ever undertook. There are a great many bees in this part of the country, but they are kept in old box hives. Pa says he will not have box hives. He has all his bees in Simplicity hives. There is a man in this neighborhood who made some of the funniest little hives you ever saw. They have two stories and a gallery, or portico, in front.

My pa says you went to a heap of trouble setting those boards in the ground around your rabbit-yard. He says you could have just laid the boards

flat on the ground, as near the wall as possible, and it would have answered, as the rabbits would never think of going back to the edge of the board to scratch, but would scratch at the wall. The same will keep rats out, only the boards must be put on the outside of the pen. MATTIE F. DILLEHAY.

Milford, Ellis Co., Texas, Jan. 5, 1885.

Thank you, Mattie. Very likely your plan of fixing the rabbit-pen will do; but boards laid on top of the ground will warp and roll up so as to be unsightly, will they not? I think I should prefer them set in the ground, as ours are.

A NEW BUG-TRAP, ETC.

I can answer one of the questions that were asked in GLEANINGS. Iron was made to swim, see II. Kings 6:6. I found it myself in the Bible. The place was in the river Jordan.

I will tell you of an invention my papa has made, and of which I send you a small paper pattern. He thinks it would save paying money for Paris green. He can clean the vines nearly as fast as he can walk. The mode of catching is to hold it in your left hand by the handle, which is a wire running from each front end to the middle of the back. In the right hand carry a broom, brushing bugs of all kinds into the basket. Then make a bonfire of straw, and throw them in. I think this is something new, and will be a benefit to you, if you raise potatoes. EDA N. WEDGE.

Friendsville, Neb., Feb. 20, 1885.

Friend Eda, your bug-trap, if I understand you correctly, is something to avoid the necessity of stooping over every time you find a bug, and I shouldn't wonder if the idea were a very good one. It seems to me that a long-handled dipper, however, would be just as good, would it not? Take the dipper in one hand, and a light broom or stick in the other. Knock the bug or bugs into the dipper, then go to the next hill, and so on.

BITTER HONEY.

Pa has 5 stands of bees, and ma has 3. Pa was looking at them to-day, and one of his was dead. Ma's are all right. The last honey we took from them last fall was bitter. Some one told us it was the honey-dew, but pa thinks it is honey they gathered from a tall weed that has yellow blossoms. The blossoms are in a cluster on the top of the plant. We do not know the name of it. Last year was our first one with bees.

HOW TO FEED.

The way we fed our bees was this: We put the sugar syrup in pie-pans, and cut a piece of paper the size of pan, and made it full of holes, and laid it over the syrup. We spent about \$30.00 on our bees last year. The first hive we bought we got two swarms by transferring, and 25 lbs. of honey. We had an Italian queen given to us; the others we bought in old-style hives, and transferred them into Simplicity hives. We did not get any increase from them.

CARP-PONDS, MUSK-RATS, ETC.

My grandpa has a carp-pond. He has been troubled by musk-rats this winter, making holes in the dam, and letting the water out. There have been a good many mink-tracks around the pond. They take fish too. I think it more likely the musk-rats instead of the crabs made the holes in your fish-pond.

HOWARD ZIMMERMAN, age 12.

Franklin Square, O., Jan., 1885.

OUR HOMES.

But the wise answered, saying, Not so; lest there be not enough for us and you; but go ye rather to them that sell, and buy for yourselves.—MATT. 25:9.

THE twenty-fifth chapter of Matthew as a whole, seems to be concerning providence; that is, it tells of the awful consequences of going through the world in a heedless, slipshod, careless way. It tells what will be the end of those who make no provision for the future; and the text I have selected touches especially on those who expect to borrow of their neighbors, to make up for the consequences of their foolish forgetfulness. At first thought one might think the verse sounded a little hard. The parable speaks of two classes of people, and in this case there was an equal number of the foolish virgins and the wise ones. I am afraid it is as bad as that in our day, dear friends. There seem to be about as many people who expect to get through the world burdening their neighbors, as there are those who expect to bravely shoulder the responsibilities of life. Forgetfulness does not seem to be quite the word to apply to the five foolish virgins. Our Lord calls them foolish. They were foolish, because they made no provision for something they *knew* they would want and must have. The tramp who stops at our doors, and asks if we can not give him his dinner, is a glaring type of this kind of foolishness. There is no forgetfulness about it. He voluntarily and deliberately decides to depend upon somebody else to buy his food; and more than that, he does not even propose to do the cooking, to say nothing of setting the table, washing dishes, and putting things away. I should call it worse than folly. We can not call it stealing, because he boldly looks us in the face, and proposes that we give something for nothing. On page 179 of our last number, Prof. Cook makes the following statement: "Something for nothing is the bane of our age." Jesus intended these words to have their application in a spiritual sense, no doubt; but I think he intended it also to apply to temporal duties. One who makes provision for the needs and the demands of this world, who strives not to be a burden upon any one, and to accord to every one his just rights, as a rule makes provision for the world to come.

It has sometimes seemed to me as if my teachings and exhortations were a good deal the same thing over and over; and I have thought again, that perhaps this is the field God has given me to work in, and that it is my duty to keep going over and over on this same ground, line upon line and precept upon precept. The matter is constantly before me, and I am constantly being saddened because of the number who come to me wanting something to do; and with sadness and sorrow I am obliged to say it, a very great many of those who complain that nobody will give them any thing to do, are like the foolish virgins. If I send them off in the fields to work, in half an hour they will come back, loitering around for a drink of

water, wasting the precious morning hours. When I say to them, "My friend, when you started out for the field, why did you not remember that you would soon be thirsty, and take the jug in the well-room along with you, filled with water?" And so it is all through. They often go to their place of work without their tools, and then come back very leisurely and deliberately for something to work with, or for what they should have known would be needed. I do not want to have you think we have many such with us here now, for I can not keep such long; I am absolutely obliged to let those go who take no thought nor responsibility in regard to the needs of the day. I have often wondered if they would work in the same way if they were working on their own ground; and after watching carefully, and looking into the matter, I am obliged to admit they would. It is not altogether selfishness, then. They wrong themselves as well as the one who should undertake to employ them.

Now, then, suppose because these people are poor and needy, we should give them a part of our stores—give it to them because they are unfortunate, and lack judgment. What is the thing to do? In our text the wise virgins flatly refused; and they gave as a reason for refusing, that there would not be enough left for them; that if they divided, the probability would be they would be in the same boat, and told them there was no other way for them to do than to go and buy, as they had done. Was it hard-hearted, unfeeling, unchristianlike? It is a very hard thing for me to refuse a favor; and it is especially hard to refuse a friend or a neighbor; but I have a great many times looked back, and have been obliged to decide that I had done a positive harm—an injury to some friend—by being too obliging, as the world calls it.

Whenever there is a revival of religion, there is always a great tendency to fall into the error of supposing that Christianity consists in being easy and obliging and liberal, and in giving to the poor; in helping folks out of tight places; but, my friends, if you do not look out, I am sure a great evil creeps in here. Perhaps one reason why our revival seasons do not result in more permanent good is because we do not encourage starting on a sound basis. One's sins may be forgiven, it is true; but I am afraid God does not forgive our sins until we have shown a manly spirit in the way of making up the wrongs we may have done to our fellow-men before we repented. It is well known about here that our institution is based and builded on godliness—at least, I try to have it so. Well, sometimes those who have applied unsuccessfully to me for work, have come out and united with some of our various churches; and after having come out, the question comes, if not right away sometimes after a time, "Now, Mr. Root, will you give me a place?" I have said before in these pages, that I am not afraid to take the risk of giving almost any girl or boy a place when I can be sure that such people are looking to the Savior, and trusting him; but I have been obliged to de-

cide by sad experience, that a profession is not enough to decide the matter. I want to see the individual and watch him a little. How quickly we can read human nature! It takes but a very little while—but a very few days, in fact, to tell pretty accurately where any man or woman stands, whether it be the things of this world they are seeking, or the kingdom of God and his righteousness.

Many of the bee-friends have tried giving brood to a colony having a poor queen, hoping to build them up strong, and make them self-sustaining. I have used this figure before, but it comes up to me so often I do not know but I shall have to refer to it again and again. The comb of brood produces its effect, and for awhile the colony seems to be a prosperous one; but the fact remains, there is no real good prolific queen at work backing up the new accession to the force of the hive. In a very little time we are forced to admit, that the colony is dwindling again, and running down hill, and no permanent good has come from the lift. It is the same in giving employment to one who has been the rounds here and there, and failed in securing a permanent place anywhere, just because of his improvidence. Worse still is the plan of making a donation, or taking up a subscription for some one who is able to work, but won't. The money given them produces the desired result for a little time, but the time very often seem to be exceedingly "little." The money is gone, and they are more destitute than before, more improvident, and feel less like going to work. Perhaps you think me hard and unfeeling. If so, take some money in your pocket and go around your own town; investigate carefully, and hunt up places where you may do good with this money; then go around again carefully, and look at the result. When we sow seed we expect it to bear a crop. The crop should be worth more than the seed sown; in fact, the harvest ought to pay expenses or more. The same way in giving money to the poor and needy. It ought to assist them in getting on their feet, and getting at least a little way toward being self-sustaining. No doubt money can be used wisely and judiciously in this way; but unless you are an old hand at the business you will do harm rather than good. You will probably conclude in the end, that the wise virgins were wise indeed in refusing to lend even a drop of their oil.

Well, what shall we do? Let these friends go to the county infirmary? Now, hard as it may seem, I have decided, over and over again, there was no other way. Please do not misunderstand me here. Widows and orphans are not what I am talking about. They do not have a fair chance with the rest of the world, and friends or relatives should by all means give them all the assistance they need. If a family of children is left without a father, of course they must be helped until they are able to help themselves. When the children get to be of the proper age they can pay their way; and the mother too, as a rule, can pay her way, and prefers to do it. We seldom see women too slothful to take care of themselves where they can do so, even though our parable does take the

sex for an illustration. Many women, I believe, work themselves to death in their anxiety to be independent and self-sustaining; and this reminds me that, as a rule, those who are deserving of assistance seldom ask for it. People who are crippled, or out of health, sometimes need assistance; still, a great many times laziness is called sickness, and I believe laziness often makes people sick. I have sometimes thought that where one has an earnest will, he gets well. We have instances all around us of people who recovered their health because of some new hobby or enterprise that enlisted all their powers of mind and body.

Our chapter opens with this expression: "Then shall the kingdom of heaven be likened unto ten virgins." You will notice that it is not only the things of this world that are to be given to the provident, and those who take forethought, but heaven itself; and the lesson teaches us that he who goes through the world, appropriating whatever comes near him, without thought or care, will find little mercy when the day of final judgment comes. The parable beyond the one I have taken, brings this out in a strong light, and it also shows us that sad fact in life, that he whose life has been all spent and wasted is always ready to throw the burden on the world, or on his greatest benefactor. The wicked and slothful servant, you will remember, began by ingratitude and abuse, with the vain hope to ease his guilty conscience. How natural is this! And please mark, friends, what a striking contrast is shown between this servant, and the one who had spent a life of doing good to his fellow-men. When the king said to those on his right hand, "Come, ye blessed of my Father, inherit the kingdom prepared for you from the foundation of the world," they were taken by surprise, and could not imagine what they had done to have merited such a favor, and such a great inheritance. They had been patiently bearing the burdens of the world; they had ministered to the sick, fed the hungry, given drink to the thirsty, looked up strangers, clothed the naked, and yet had forgotten all about it. In fact, they were not expecting any thing. I have sometimes looked out upon the world; and as I meditated, I was lost in wonder to see the wide, wide distance that lay between two who may be passing side by side on the street. One is vicious, selfish, greedy; he robs and plunders at every step. By example and precept he breaks down righteousness, godliness, and sobriety every where he can. His whole soul seems bent on self and lust. By his side may be one whose every act in life indicates a thirsting after righteousness—one who bears uncomplainingly the burdens pressed down upon him by multitudes like the companions by his side, and yet he does not know it. The one dreams not of the awful doom that awaits him, and the other dreams not of the reward awaiting the end of his pilgrimage. We do not know what becomes of the improvident servant, but we read this:—

Cast ye the unprofitable servant into outer darkness: there shall be weeping and gnashing of teeth.

Every human being has rights. The five wise virgins had prudently provided oil for their lamps. This oil was their own; it was right to do what they pleased with it. They had their busy cares, very likely, and perhaps did not think of, may be did not know of their improvident neighbors. I have sometimes thought that this right, belonging to every individual, was a sort of circle surrounding him, extending a certain distance, and this circle is his own premises. Nobody has any right to infringe on it. Even our smallest boy who comes to work here at three cents an hour has his circle of rights. The three cents which he honestly earns belongs to him, subject, of course, to his parents' approval. He is a man, to all intents and purposes. Nobody has any right to borrow his earnings if he does not choose to lend them; and those who are older ought to know better than to try to borrow from him. They have no right to take advantage of his inexperience, by asking him to loan his small earnings. A few times I have been obliged to be pretty severe on some who had a weakness for borrowing from their fellow-workmen, especially from some of the younger ones, who did not know they would not pay as they agreed to. A great many good people very much dislike to disoblige, and so lend against their better judgment. Sometimes when our wagon breaks down, the hands suggest going across the way and borrowing of our neighbor, who is a dealer in lumber, and has many teams. I know he would let me have a neckyoke or a wagon, or may be a horse, if I should ask for it; but the very reason why I dislike to ask him for any thing is because he is so very kind and obliging. Now, under the circumstances it seems to me I have no right to ask the loan of his tools, unless the circumstances are very urgent indeed. Once one of the hands, without my knowledge, went over and borrowed a neckyoke. A week or two after, I found it where it had been dropped. The hand who got it had forgotten to take it home, and our neighbor was too good-natured to come after it.

A little boy once got a bright new sled for a Christmas present. It was an extra nice sled, and he was proud of it. A neighbor borrowed it to get a sack of flour. He left it in front of the postoffice, or some such place, while he went in for his mail, and somebody stumbled over it, and in his anger kicked and broke it. The neighbor took the sled to a tin-shop and had it patched up with some pieces of tin, telling the boy it was just as good as ever. The boy did not think so, and he never cared for his poor broken patched-up sled afterward. His rights had been invaded. If any one prefers nice new things, without patch or blemish, it is his right, if he pays for them. The man who borrowed the sled was a Christian. A friend of mine had an old cutter which he had loaned so much that it was not decent to take the children to Sunday-school with. He bought a nice new one for the purpose. In order to get rid of the old one, as he did not care for two, he had it repaired and painted and varnished, so it looked quite respectable, and he did this *on purpose* that

he might sell it. Before the paint was hardly dry, his old friends wanted to borrow it. He was too easy and obliging to refuse downright, as I should have done, and off it went. Before the borrower got quite home, another man wanted it to go to a *temperance* meeting. When it got back from the temperance meeting it was marred, and broken in several places. The temperance-meeting man said he did not break it, and the first borrower said *he* did not break it, and he guessed it must have been so in the first place. As the last one who used it did not know where it belonged, it did not get home for a couple of weeks; the winter was then almost gone, and the cutter can not be sold until another winter. Those who borrowed the cutter were church-members, and the man who owns it is not. I have been for years trying to convince him that church-members are more reliable, as a rule, than people who are not. Do you wonder that his faith is small? Now, my friends, it seems to me that if we want to honor Christ the Savior, it is of far more importance that we avoid trespassing on the rights of our fellows than it is to make a *profession* of religion, or to be energetic and zealous in the *temperance* work. If you want to win souls to Christ, be careful how you heedlessly trample upon the rights of your easy and obliging neighbors. I do not believe it is a good plan to borrow, as a rule. When you are *obliged* to, remember the borrowed property is, as it were, a sacred trust. Keep your eye upon it, with tenfold more diligence than if it were something of your own; for by so doing you will honor the Savior in a way you can scarcely do otherwise. If it is injured, do not rest by saying it is as good as when you got it. Make it a great deal better. Let the world understand, and let the all-seeing Eye recognize, that you propose to go through this world leaving your fellow-men more than they had before you came along, rather than less. Never let it be possible for any one to say truly that you have been "reaping where thou hast not sown, and gathering where thou hast not strewed."

Some of you come to me for advice. Some of you ask me what you shall do to inherit eternal life. Well, now, if you value my opinion and judgment, it seems to me almost the greatest need is in the direction I have pointed out—in honoring God by letting the world see and know that you are not disposed to trespass on the rights of any one. This amounts in substance to what Jesus said: "Thou shalt love thy neighbor as thyself."

We have much trouble, as I told you before, here in our large factory, by borrowing tools, and heedlessly dropping them where they were used. One of my greatest cares is to keep an eye on this sort of work. We have one boy in our number (and he is one who has newly found the Savior) who has made up his mind to have tools of his own, so as not to trespass on the rights of others. One day I saw a brace and bit lying where he was using it, and asked him if somebody would not be wanting it. He looked up smilingly, and, with a little conscious pride,

replied, "Mr. Root, this is *my* bit and brace." On inquiry I found he had purchased with his earnings a little saw, two sizes of hammers, and some other tools that he needed often in his work, and was independent, you see. I told him if he would make a little chest for all his tools I would give him the lumber, and pay him for the time while he was making it. You see, you can honor the Master by having tools of your own, instead of wanting to borrow. People may be stingy of their tools, their cutters, their buggies, and may be of their horses, but it is their right. I like to see people who have the good sense to refuse to loan their things. I do not believe I should feel hurt if somebody explained to me that he would rather not lend something I asked to borrow; but I do not believe I shall be subject to such a trial, for I am not going to ask people for things when I am pretty sure they prefer not to lend them; or, if you choose, when good sense would dictate that they would better not lend them. A mutual exchange between neighbors is sometimes very desirable. Now, then, if you want to show your zeal for Christ, can you not show it more effectively in the way I have pointed out, than by any great amount of talk in public, or any strong profession. Remember what the king said of the careful and the provident:

Come, ye blessed of my Father, inherit the kingdom prepared for you from the foundation of the world.

NOT ALWAYS DEAD WHEN THEY APPEAR TO BE.

SOMETHING APPROPRIATE FOR THE PRESENT SEASON.

LAST evening I discovered that one colony of my bees were dead, or I supposed they were. It was a very small swarm, not over one quart of bees in all; they were clustered on three frames, and their stores were all consumed, so of course I at once pronounced it a case of starvation. Part of them were clustered naturally between the combs; the rest were on the bottom-board. I brought them up into the kitchen, took out the center comb, and on that found the queen. She is an Italian, that I bought and introduced last fall. I took her in my hand and breathed on her for about two minutes, when one of her feelers began to move; then I put a drop of honey by her tongue, and within ten minutes we had her in a cage, alive and smart.

We then turned our attention to the others. As yet they had shown not the least signs of life. We breathed upon them, and held them where it was warm, also sprinkled some thin honey among them. Soon one after another began to move, and within half an hour they were so lively we were obliged to put them into the hive and close them up. This morning I found at least three-fourths of them alive, and they appear to be none the worse for their nap.

Now, Mr. Root, do you ever know of a case where bees were so far gone as those, and still live? It is my opinion, that a great many bees are destroyed that might be saved by a little pains on the part of the bee-keeper who imagines his bees are dead when they are not.

A great many colonies are starving to death this winter, in this county. I know of 50 or more that have starved, and it seems really too bad when it costs so little to keep them alive. My bees have been in the cellar 120 days already, and but very few have died, probably not more than a quart in all. The most of them have granulated sugar in cakes over the tops of the frames, in case they run short of honey.

J. R. BALL.

Knowlton, Ind., Feb. 28, 1885.

Friend B., we have had a good many such reports; but as the matter comes up every spring, it is a good plan to have it repeated. You will find the same thing mentioned in the A B C book, and, if I am correct, a colony may be saved after they have been in this condition for 24 or even 48 hours. I have never been able to discover that they were in any way injured by this nap of apparent death. It almost always occurs when bees are out of stores, or nearly out. Sometimes when candy is laid over the frames, the cold prevents them from using the candy, especially where the colony is weak. Where a colony has candy over the frames, broken up into small pieces the size of a hickory-nut, or smaller, they will usually get enough of it melted and stored in the combs to last them through any freeze we may have in March.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT.

EDITOR AND PUBLISHER.

MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clipping Rates, See First Page of Reading Matter.

MEDINA, MAR. 15, 1885.

Then shall he answer them, saying, Verily I say unto you, Inasmuch as ye did it not to one of the least of these, ye did it not unto me. MAT. 25:45.

CLOVER FOR SPRING SOWING.

We have a splendid lot of alsike and mammoth red, or peavine. A sample of seed will be sent to those who are unacquainted with the peavine. Clover seed by the bushel can be sent safely by freight, and is much cheaper than by express; but you will have to order it some little time before you need it for freight is, I believe, apt to be slow.

DISCOUNTS BETWEEN NOW AND APRIL 1.

DISCOUNTS on section boxes, comb fdn., and comb-foundation machines, will be extended as in our last issue until April 1. Of course, demand and supply will decide whether these discounts can be carried after that date. We can fill any order for almost any thing now, promptly; but the season is fast approaching when delays are likely to be almost unavoidable.

SECTIONS DOVETAILED ALL AROUND.

THE "odd-size" business begins now to make trouble again, as is usual about this season of the year; and when we said we would make sections

dovetailed all around, at the same price as the one-piece section, we forgot about odd sizes; and at present it looks as if it could not be done. That is, we can not make four-piece sections, odd size, nearly as easily as we can make one-piece sections odd size.

WHO FIRST STARTED IT, AND WHOSE INVENTION IS IT?

SINCE our talk about moral patents, this thing seems to be coming up a great many times; and in the *Apiculturist* for February our friend P. C. Elwood takes the *A. B. J.* to task for copying the plan of the Question Department, claiming this to be original with the *Apiculturist*. We would remind friend Elwood, that this idea of getting prominent men to give their opinions collectively on certain important subjects was a special feature of the *Bee-keepers' Instructor* in 1882. We were so much pleased with this idea at the time it came out that we commented on it, and copied a page or two. See GLEANINGS for July, 1882, page 230.

DECLINE IN PRICE OF TIN.

THE price of tin, per box of 112 sheets, suitable for separators and honey-cans, will be, until further notice, \$5.50 instead of \$6.00. Tagger's tin, a good deal thinner than the above, which we now use expressly for separators, unless otherwise ordered, \$5.00 per box. This is considered preferable to ordinary tin, because it conducts away the heat of the hive much less, on account of its thinness. It must be handled much more carefully than ordinary tin, and is not suitable for honey-cans, unless they are very small ones. Best charcoal IX tin, \$7.50 instead of \$9.00. All the above is 14 x 20 in size, and 112 sheets in a box. These prices are for tin on board cars in Philadelphia.

WATERBURY WATCHES FOR 1885.

A STILL further improvement is out, and we have just received a gross of them, and the manufacturers have given us an arrangement whereby we are enabled to send GLEANINGS one year to every customer who purchases a watch at the full retail price of \$3.50, but we are not permitted to sell a watch any cheaper where GLEANINGS is not wanted. We can, however, do this: You can have two watches for \$6.00; or anybody who has already purchased one Waterbury watch can have another for an even \$3.00. With every watch, we now send a pretty nickel-plated steel chain. On the chain is a hunter's whistle. This pretty little chain will be only 5 cts. where it is wanted without the watch.

THE HEDDON HIVE AND SYSTEM.

At the present writing we have received orders for just two Heddon hives. I am a little surprised at this; but I presume the reason is, that so many of us are loth to bring a new hive or fixture, that does not correspond with our other hives, into the apiary. Besides, every advantage that friend H. claims, can be secured with the Simplicity and chaff hives, unless it be the 8-frame feature. When these new things come up, I think it is very much better to test them with the hives we have already in use, rather than to start new hives and new frames. I am very sorry indeed that friend H. insisted on a frame 17 $\frac{1}{2}$ instead of 17 $\frac{3}{4}$ long. Great confusion is going to result here in spite of us. We do not remember that we have received an order for a Langstroth frame 17 $\frac{3}{4}$ long, except twice, and

we shall make our hives and frames for the usual 17 $\frac{3}{4}$, unless our customers specially state that they must have them 17 $\frac{1}{2}$.

BEE-KEEPERS' CONGRESS AT NEW ORLEANS.

IN view of the fact that friend Newman has prepared a very full and elaborate report of all the proceedings there, including even the names of those who were present, I do not think it would be best for us to attempt to repeat the same in GLEANINGS. If you are not a subscriber to the *A. B. J.* (it seems to me every progressive bee-man ought to be), friend Newman will doubtless send you the two numbers containing the report, on receipt of ten cents. Where there is so much matter for our journals, and so much good matter that we can not find room for, it does not seem to me advisable to have one journal a repetition of another. I know there is something to be said on both sides of this, but I believe the majority of our readers will agree with the above.

REVERSING DEVICES.

THESE still come in considerable numbers daily. C. H. Deane, Versailles, Ky., and John Consor, Glen, Kansas, both claim that we infringed on their inventions in my wire reversing device, as given in the last number. I confess I have this far: They sent such an arrangement made of sheet iron, and mine is made entirely of wire. I do not like the sheet iron, and would not use it, but I like the wire. Well, if mine is an infringement, the question arises, "Which of the two is entitled to precedence?" On investigation I find the postal cards which each one wrote when he sent his device, are dated exactly the same—Feb. 11. Friend Deane claims, however, that he is still ahead, for he invented and we illustrated something quite similar, for another purpose (see illustration in GLEANINGS for March, 1882, page 180). I admit the similarity, and yet the device alluded to was made when no such thing as reversible frames was thought of; nor was it intended, nor is it adapted, for the purpose. Perhaps we had better await further developments a little.

WHEN ORDERING THE ABC BOOK, SAY WHICH YOU WANT—CLOTH OR PAPER.

ALMOST daily we have one or more orders for the A B C book, without saying which they want—cloth or paper edition. It is true, we can sometimes make a guess by the amount of money inclosed; but since we have offered the cloth-bound book postpaid for a dollar to those who have already bought one, the price sent does not help us much. We began sending the paper-covered one to those who sent a dollar; but, oh my! what a breeze it made because we did not remember they were entitled to dealers' rates, the writer often saying that he would not take a paper-covered book as a gift, and back it comes at our expense. Then I told the clerks to send cloth-bound in every case, unless the writer said plainly, paper covers. This seems to be the lesser of two evils; but for all that, a great many say we might have known by the amount of money sent what was wanted, and they accordingly refuse to pay the 25 cents balance, or suggest returning the book at our expense. Now, friends, what can we do, unless you say in your order, cloth-bound or paper-covered, and also state whether you are entitled to dealers' rates or not? We are very anxious to please, but we do not like to be scolded when we are doing as well as *anybody* could do without fuller instructions.

A Splendid Offer.

To all those who will send us **at once** their subscription to the

American Apiculturist.

For one year \$1.00 and \$1.50 extra, or \$2.00 in all, we guarantee to send a choice Italian queen worth \$1.50. These queens are bred for us by a careful and reliable queen-breeder. We also give away to all those who will send us their address, plainly written, an interesting and valuable little pamphlet, the "Bee-Keeper's Companion." Send us your address **at once.** Address
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SILAS M. LOCKE, Salem, Mass.

LOOK HERE!

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→ TEXAS RED BIRDS. 4-4

→ ITALIAN QUEENS.

For sale at reasonable prices. Address 5-6d
W. D. BALL, Columbia City, Whitley Co., Ind.

Dunham & Vandervort Foundation

We have bought a large stock of choice yellow beeswax, and can furnish Dunham comb film for brood comb, cut to any size, for 50c per lb.; thin and bright yellow film, for sections, at 55c per lb. Extra thin Vandervort film, 10 to 12 sq. feet to the lb., for 61c per lb. We guarantee our film to be made of pure beeswax, and not to sag. Will work up wax for 10c per lb. for brood, and 15 and 20c per lb. for sections. To induce our customers to order film early in season, we will allow 10 per cent discount, on all orders received before the first of May.

E. W. HOLMES,

5ftdb Coopersville, Ottawa Co., Mich.

1885 ITALIAN QUEENS 1885

Untested Queens in March and April \$1.25
Afterward 1.00

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APRIL 1, 1885.

No. 7.

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NOTES FROM THE BANNER APIARY.

NO. 64.

RAISE FIRST-CLASS HONEY.

EACH year, when attending the bee-keepers' convention at Chicago, I have spent half a day among the commission merchants of South Water Street, where the sidewalks are piled full of barrels of apples, nuts, beans, and onions; baskets of peaches, grapes, pears, and plums; coops of cackling poultry; piles of dead partridges, quails, and ducks; boxes of cheese; firkins of butter, piles of crates of honey, etc. Only a narrow passageway wide enough for one person to pass is left through the center of this endless profusion of "good things." This passageway is intersected in front of each store by a passageway entering from the store door to the edge of the sidewalk. Inside, the stores are filled so full that I felt to wondering how the sidewalks could be cleared at night. The street is *literally filled* with trucks and drays engaged in carrying away and bringing in the varied products. The passageways upon the walk and in the stores are alive with a pushing, bustling, eager, but good-natured crowd of sharp and experienced buyers. It is interesting to stand back out of the way and watch the proceedings. Whatever is attractive commands immediate attention; but it must *bear inspection* before it can be sold at a *high price*. Buyers expect that the red cheeks of the peaches will be turned uppermost and against the cracks in the baskets, but they want no culls in the center. The nice-looking apples disclosed by the removal of a barrel-head do not satisfy the would-be purchaser, so out comes the hatchet that always hangs at the belt of a

"helper," and three or four holes are cut through the side of the barrel. No matter how nice the honey may appear when seen through the glass side of the crate, this same ever-ready little hatchet must needs pry off the cover to the shipping-crate, and allow the inside sections to be examined. My friends, it is through such an ordeal as this that your honey must pass, and under such circumstances that it must be sold, if sent to a commission merchant. If it is second class, it will stand a second-class chance of being sold, and, when sold, must be sold at a second-class price.

When in conversation with one of the commission merchants in regard to the advisability of sending my honey there to be sold, he said, "If it is white, the combs straight, and the sections well filled, I think we can sell it for you at a good figure; but if it is dark, or even a little 'off,' or if the combs are not well finished, don't send it. You had better sell it at home for a shilling a pound—yes, for whatever you can get for it." He then took me back into the store and showed me some third-grade honey put up in third-grade style. The crates were made of inch boards, and held about 50 lbs. each. The lumber was planed, but was somewhat weather-beaten. There was an opening covered with glass upon one side of each crate. These openings had been cut out with a coarse saw, and no pains had been taken that they should be well proportioned, or even that the angles at their corners should be right angles. The honey was dark, and there was no space between the honey and the cappings; the combs had a yellowish cast, and the propolis had not been cleaned from the sections. That honey had stood there *one year*, and the consignor had complained bitterly because the consignee was "so slow." This is, of course, an extreme case; but I saw all

grades from this up to straight, neat, well-finished white combs, in smooth white sections, crated in small crates of clean white basswood. There was but little, however, of the latter; for it had been bought up "too quick."

Scattered about in the heart of this great city, Chicago, are the stalls of fruit-venders, and it is interesting to see how well the owners of these stalls have learned that *appearance has a market value*. They never buy any apples except red ones, and they rub and polish these with a cloth until they shine like mirrors. Their plums, pears, peaches, and grapes are always placed with the *bloom uppermost*. Some of them will take a small round peach-basket, and fill it with a mixture of grapes, plums, peaches, pears, and apples. These fruits are so artistically placed as to form a perfect picture, and over them is fastened a piece of pink mosquito netting, which gives the whole a hazy, mazy, far-away sunset ruddy glow that is very alluring—perhaps too much so. The mind knows that the eye is deceiving it, but the deception is so pleasant, and 50 cts. changes hands, causing scarcely an economical twinge of its owner's conscience.

Now, on the other hand some people, mostly producers, put their products on the market in a condition that is absolutely unattractive, if not disgusting. Why they do so is beyond my comprehension. When will honey-producers learn that *appearance has a market value*? The honey stored in bulged combs, in weather-beaten sections uncleaned of propolis, and crated in an uncouth manner, may be just as sweet as any honey, but it will *never* sell for so much as that stored in straight combs, in white clean sections, and crated in neat, clean crates. It costs but little more to raise strictly first-class "gilt-edge" honey, that will sell for from one to three cents per pound above market price, and sell quickly at that, than it does to raise "stuff."

The first step necessary in raising first-class comb honey is, that the honey be *white*. This depends upon the source from which it is gathered; hence the bee-keepers must be located where the main honey-producing plants furnish white honey. Next, it is imperatively necessary that the sections be smooth and white. To save (?) one or two dollars in buying 100 second-class sections is the very poorest kind of economy. Get the *best*. The white poplar sections are superior to all others as regards whiteness, smoothness, and hardness. I have been quite enthusiastic in explaining how to dispense with separators, and have shown by my *works* that first-class honey *can* be raised without them; yet, if any one does not wish to comply with the conditions that I gave, or having done so, still does not succeed, then let separators be used *by all means*. We *must* have straight combs. Unless the tiering-up system is used, it is necessary to remove the sections as soon as finished, otherwise the combs become travel-stained. I have seen considerable honey placed upon the market, in which a few cells along the lower edges of the combs were unsealed. No honey can rank as first class in which the cells are not all sealed, or the sections are daubed with propolis. Too much attention can not be paid to crates. Even second-class honey will sometimes sell quite well, if nicely crated. This matter of crates is becoming so important that it is even mentioned in the market reports (see what A. C. Kendel says in his market report in GLEANINGS of March 15th). The crates should be of thin white lumber, and

kept as clean as possible; in fact, I have sometimes thought of covering them with thick paper when shipping them, that they might reach the market with their immaculate whiteness unsoiled. Of course, holes should be cut in the paper where it comes over the glass.

Please don't paste a great placard upon each crate, announcing that "this honey is from the apiary of the great Mr. So and So, of So and So." The first thing the commission merchant will do is to soak and partially scrape off these placards, thus giving the crates a ragged, dirty appearance. You had better send to your commission merchant for a stencil-plate. This plate will have 3285, or some such number, artistically woven in with the address. That is *your* number, the number of *your* stencil, and is recorded in a book opposite your name and address; and when your honey arrives the merchant will look up 3285, and find that the honey belongs to John Smith. When marking the crates, don't daub the blacking all over every thing, but try to make the marking look as neat as so much printing.

First-class comb honey must be first class in appearance as well as in quality; in fact, so far as its sale is concerned, the appearance is of more importance than the quality. Not so with extracted honey, in which quality is fully as important as appearance. Comb honey is a thing of beauty, is used as a table ornament as well as a delicacy, while extracted honey can be made no more ornamental than molasses or syrup. The only way in which an attractive appearance can be given to extracted honey is to put it up in attractive packages. The only requisite in raising first-class extracted honey, aside from the source from which it is gathered, is that the honey be thoroughly ripened. Some of our best apiarists assert that honey extracted as soon as gathered, before it is ripened and sealed over, and then ripened or evaporated by exposure to the air or to the sun's rays, is as good as that ripened and sealed up in the hives. Others, among whom is the writer, think no honey is so rich, sweet, and finely flavored, as that ripened and sealed up in the hives.

Now, if in order to have extracted honey first class it *must* be sealed over, it appears very foolish to raise it. We take a frame of sealed honey from the hive. Now, if this honey had been stored in *sections*, the honey would have been worth 15 cts. per lb.; *now* we must extract it and sell it for 8 cts. Of course, the comb is left; but, see here: the honey and comb weigh 6 lbs.; and if in sections would sell for 90 cts. We extract 5 lbs. of honey and sell it for 40 cts.; is the empty comb worth half a dollar? "But," says some one, "we can not get so much honey per colony when it is stored in sections as we can in frames." Beg pardon, my friend, that is simply because you don't know how.

W. Z. HUTCHINSON, 64—94.

Rogersville, Mich., March 29, 1885.

And so, friend W. Z., you are going to "sit down on" extracted honey, are you? Well, all right. Your article is certainly a most excellent one, and hits the nail right square on the head. If there is any mistake anywhere in it, it is in that last paragraph, and may be there is not any there, although I think there may be circumstances under which one can raise extracted honey to a better profit than comb honey. We

hear of a good many markets where they get about as much a pound for one as for the other. Under such circumstances, the extractor is, without question, ahead. I am glad to notice that your article includes a broader field than bee culture alone. It is getting now so that in every department of life one who is careless and slipshod must take a back seat, and work for small pay. In our new book on potato culture, which our printers are now at work on, friend Terry mentions passing a neighbor on the road while he was hauling his fine large potatoes to market. Friend Terry had sold out his whole crop at a big price, but his neighbor was drawing back home a load of small scabby potatoes, because the market was overstocked. As they stopped to talk a minute, this neighbor remarked: "Well, Terry, you are a lucky dog." The author of the book replied that there wasn't any luck about it; it was simply hard work and common sense.

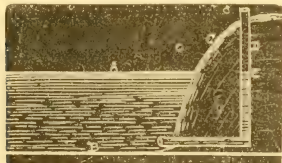
PURE GERMAN CARP.

Directions and Instructions.

FREEZING OVER.

Concluded from last number.

THIS is something that must be prevented, in order to save the fish, more especially in the Northern States. If there is a strong spring, or if fed by a tile ditch that affords a strong stream, there is no danger of the freezing injuring the fish, unless it is extremely cold; then they can be kept open by using the ax twice a day. A plan that will never fail is this: Where your bank is the most suitable, cut a ditch near the bottom into the bank far enough so that a perpendicular line will make the top about four feet above the high-water mark in pond; then take tile or box; run it horizontally, forming an elbow, then perpendicularly. To illustrate, see drawing.



FIXING A CARP-POND SO IT CAN'T FREEZE OVER.

- A, high-water mark in pond.
- B, bottom of pond.
- C, the bank.
- D, the air pipe or box.
- E, height of water in pipe.

It being about four feet to the water from top of ground, it will never freeze, therefore the air will be passing under the ice in the pond all the time. In a very cold climate the pipe can be run further in the bank, which will make it deeper to water from top of tube. As soon as you get the banks, levees, and dams completed, set out peach, cherry, or willow trees, and sow grass seed of different kinds.

Now I believe we have you ready for the carp. I would advise you to get the three kinds. They will not mix, and when prepared for the table there is no

perceptible difference in them. Some prefer the scale, because they are easily cleaned. The mirror is the most rapid grower.

CARE OF CARP.

They are naturally vegetable feeders, but will not disdain worms, larvæ, and other animal substances. Where there is not an ample provision of vegetable food, the fish may be supplied with crumbs of bread, leaves of cabbage, lettuce, etc., sweet or Irish potatoes, or with corn, rice, and other cereals, either entire or ground, and which should be boiled in plain water before administering. No more food should be given than the fish can conveniently consume without leaving any to sour and spoil. You should endeavor to feed always about the same time, and at the same place in the pond. If you wish to teach them to come at a signal, choose some sound or whistle, and always make the same before feeding them. After the cold weather sets in they need no feed, as they bury themselves in the mud whenever the temperature of the water renders it necessary. In this condition they should not be disturbed. I have found by experience that about 12 o'clock at noon is the best time to feed, for two reasons. 1. The water is in the best stage; 2. We feel more like spending a few moments just after dinner, than at any other time in the day. And I tell you, my friends, when you get carp you will find more enjoyment in feeding them and watching them eat, than in anything you ever watched before. Think of seeing them come up, rolling over one another after the food, acting like so many pigs.

The carp, as I told you in my previous article, are not carnivorous, and should not be in a pond with other kinds of fish. They do not destroy their young, unless almost starved. Don't put them in with other fish. Be sure your pond is clear of all fish, or any thing that would destroy either spawn or carp. If you have fish in your pond, drain it and clean out the mud. If you can not do that, then drag the pond with a good seine until you get it clean. If this fails, the last remedy is to get some experienced hand to blow them out with dynamite. I am opposed to this, but it is the last resort.

The ponds in which carp are placed should have a muddy bottom, and be well provided with aquatic plants, especially such as produce seeds that drop into the water when ripe. The fish should have something to attach their eggs to, such as leaves and stems of living plants in the water or grass, and brush around the edge of pond, where the water is not too deep.

Now you have the pond completed, and the carp in it, the next thing is to get them out. Well, if you want to get out a few small fry for your neighbor, use a small minnow seine. Feed your carp, then run around with one end of seine; but you must be quick and still about it. If you do not catch enough the first time, wait an hour or so, being still, then try again, and so on until you get what you want.

CATCHING THE CARP.

I have a pole, line, and hook. I bait the hook with stale light bread, which floats on the surface of the water, and the carp come to the top to suck it down. As soon as they feel the hook they start to run, and I then tighten on the pole a little, then slacken and play with them until I worry them out, and land them without further trouble. After catching one in this way they become very wild and

timid, and it is a long time before I can get them to show themselves again. Always bait two or three spots if you can, so that, when the fish are alarmed at one you can rest it and go to another, casting in a few handfuls of bait before you leave, to bring them back while you are gone. Carp will take as bait, worms, gentles, wasps, grubs, plain and sweet paste, boiled green peas and potatoes, as ground bait, but I have better luck surface fishing, and I use bait that will swim. The great secret in carp-fishing is to keep quiet and fish fine. Carp are called the crafty fish, as sly as a fox. On the slightest noise or jar on the banks they will go to the deepest water with great rapidity.

In conclusion, my friends, I have endeavored to give a plain and comprehensive description of the carp business; and if I have overlooked any points, or should you wish to ask any questions in reference to the carp or ponds, inclose a stamp and I shall be pleased to answer any thing in my power, and will take great pleasure in doing so.

Andersonville, Ind., Feb. 6, 1885. W. S. KALER.

Friend K., it seems to be a disputed point as to whether letting the pond freeze over does harm or not; but your ingenious device makes it quite easy to give the carp access to air at any time. Within a few yards of the shore of our carp-pond is an old well, built when our grounds were used for the Medina fair. I can reopen this well, lay a six-inch drain tile from the bottom of the carp-pond, or from the deepest place, and carry it into the well on a level. The fish can then go through into the well whenever they like, and the well will never be frozen over. Mr. Peirce, the author of our book, objects to traps around the carp-pond, as they keep off the suh; and in our latitude we want every bit we can possibly get; in fact, it is pretty well proven that the warmer the temperature of the water, the better; and excellent results have been obtained where the heat was carried by artificial means to a higher point than we ever get during the hottest summer weather. I do not believe I should want to have my fish frightened by letting anybody catch them with a hook and line.

HOW TO DO BUSINESS IN SUCH A WAY AS TO AVOID COMPLAINTS.

A LITTLE SKETCH, AND AN IMPORTANT MORAL.

SOME years ago a merchant in the city of New York took a notion to bee culture. In furnishing him supplies, some mistakes were made. In writing about it he made a remark something like this: That if I would come to New York he would show me a business house that made sales to the amount of something like half a million yearly, and yet they managed it all almost without a mistake, or a complaint from a single customer. I give the above from recollection, so I may not have got it right, but I have often thought of it. Can anybody conduct his business so thoroughly, carefully, and prudently, that nobody can find any fault? Could we have buyers and sellers who are not liable to human weaknesses, may be it could be done; but, alas! we are all human—exceedingly human, I sometimes

think. Now, I want to give you a history of a little transaction, and I do it simply to point a moral in one direction. Here is the story:

January 12 we sent a customer about \$25.00 worth of bee-supplies. After he had checked them off he writes as follows:

I received the three packages of goods by railroad in due time; and upon counting the metal corners I find that only 24 frames are supplied with corners, and two parts of another frame; that is, the upper corners that frame hangs on are all that came with the packages. As there should be fifty, there is a mistake somewhere. The packages all came in good order—nothing had been disturbed after they were nailed up until I opened them, and nobody has had any thing to do with them but myself, so I know what I am writing about. Now, I can't do without the corners, and you must send them by the way that they will come cheapest, either by mail or express; and if you say I must pay for them, send me amount by mail, and I will forward whatever you say. R. B. HOAG.

Lockport, N. Y., Feb. 6, 1885.

You will notice that our friend is not at all complaining nor difficult to please; he says he will pay whatever we say. From his writing you would also decide at once that he is a man of experience in such matters, and one not liable to be mistaken. Investigation, however, showed that the goods were put up by our most careful packer—a man who stands at the head of our shipping business, and who has been trained to it from childhood. When the clerks find a complaint has been made in *his* packing, they always write back, stating the case, and asking that further search be made. Our customer, however, insists he is right, as you will see by the following postal:

Only one package of metal corners with the goods. All have been taken out; number as stated before is all that there was in package. Please forward the rest and oblige. R. B. HOAG.

Lockport, N. Y., Feb. 12, 1885.

Here are two good men, right squarely against each other. I told the girls to tell "Bert" (Bert is the boss of the packing-room, whom I have been telling you about) he need not pay the postage on the missing corners, because his mistakes were so very rare that I could well afford to pay for them when they happened. But I now find written across the postal card, "Stood it in spite of us," which means this: Bert said that he preferred to pay the postage; that he would rather do so, as it would teach him to be *still more* careful. It gives me a pleasant thrill to see this, because these two men, each of them, agree or prefer to stand between me and loss. This is what I call a real Christian spirit. It is a matter of only a few cents; but when we learn to dispose of matters involving only a few cents, with a good spirit, we shall be able to manage greater matters. I was quite willing to pay the postage; friend Hoag was quite willing to pay the postage; friend Bert was quite willing—or, still more, he good-naturedly insisted on bearing it himself, because he *might* have been at fault. Now for the sequel:

I write to you to make acknowledgment, and to restore to you what I supposed you had left out in my order to you several weeks ago. You will remember that I supposed I was short 25 metal-corner sets for frames in bee-hives. I have just discovered that one package of corners, as I took them out of packing-box and put them in a tool-chest, got shoved under the till of the chest, out of sight. It was some time after I unpacked goods before I discovered that I was short; but before I wrote you I made search to be sure, but I could not make out that I had the goods. I of course wrote you in good faith. Now I have found the package by overhauling and looking after something else. Now I send you for corners, 50 cts., and 25 cts. postage, and I also ask your pardon for the blundering way I have done this business. I did it all myself, without laying it to boys or agents. R. B. HOAG.

Lockport, N. Y., March 16, 1885.

Now, one lesson from the above is, that it shows how very easy it is for even the best of us to be mistaken. Another point: How can I, with a clear conscience, insist that any clerk shall pay heavy postage or express charges on goods our customer declares the clerk did not put in? Think of taking a poor hard-working boy's or girl's money when neither of them is in the least to blame; and yet I fear I have done that in times past. Last, but not least, may not the above prove a lesson to every one who receives goods and unpacks them? Why, I have sometimes thought I would give almost any thing for a clerk who would do exactly as I told him in this respect. With the years of experience I have had in the business I will say to them,—

"My friend, before you open that package, get a clean table, without any thing on it, and be sure you do not place a single article anywhere else than on that table. Don't take your box or barrel away until you are perfectly sure every article has been carefully and plainly checked. If the package is so large that it must be spread out on the floor, get a clean floor; do not have any rubbish anywhere near you."

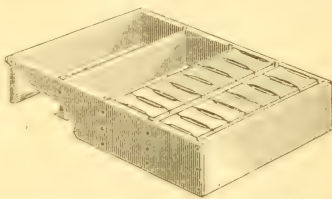
Now, in spite of all these instructions, young people and old people, day after day, keep saying such a thing is "all gone," "wasn't in the package," etc. Our children learn it in youth by coming downstairs, and saying, "Mother, I can not find it anywhere; I looked everywhere you told me, and it is not there at all." Mother takes the child by the hand, leads it upstairs, and points to the article. "Where can your eyes have been when you came up here?" Did you ever see children do that way? Well, now, my friend, you want to get that child out of that heedless, shiftless way of doing, or it will be the curse of its life. Drill these little ones to be careful and thoughtful by line upon line and precept upon precept. Make them understand and comprehend that a careful boy or girl, and an accurate, reliable boy or girl, is worth her weight in gold; whereas the blundering kind that have eyes and see not, ears and hear not, are a clog and a hindrance to themselves and everybody else. I once heard of a little girl who said she had an excellent "forgettery." Poor child! There are whole families just like her. Now, then, friends, old and young, who among us is going to excel in this line of being careful?

SIMPLICITY CRATE, MOORE'S STYLE.

Made to go Inside of a Simplicity Hive.

FULL INSTRUCTIONS HOW TO MAKE AND HOW TO USE IT.

THIS crate, which might also be called the Heddon crate adapted to the Simplicity hive, is shown in the cut below. This crate is exactly 14½ inches wide by 18½ long. The sides are rabbeted in so as to make room for the three partitions as well as the end-boards. All of the partitions are ½ inch thick; the end-pieces 5-16 thick. The sections are supported by a strip of tin tacked along the bottom edge of each partition. These strips of tin are ½ inch wide by 13½ long. The end ones are folded in the middle at a right angle, and these are tacked against the lower ends of the end-boards, as will be seen by the cut.



CRATE FOR SECTIONS TO GO INSIDE OF SIMPLICITY HIVES.

The end-boards are 4½ wide, while the central partitions are only 3½. The partitions are nailed at such height as will bring the sections even with the top of the case. This brings their bottoms the regular bee-space of between ¼ and ⅝ of the bottom edge of the crate. We prefer the bee-spaces under the sections; because if any one should make a blunder, and set the cases right on top of the brood-frames, the bee-spaces would be all right. If you want to use the Heddon honey-board, or one made Heddon style, to fit the Simplicity hive, the honey-board lies on top of the brood-frames, and the crate goes on top of the honey-board.

You will notice, we do not use a *sunk* honey-board. The reason of this is, that the side-boards of our Simplicity hive rise above the tops of the brood-frames far enough so that a *sunk* is unnecessary in the honey-board. If you want to tier up these cases, one can be placed right on top of the other, as high as you choose, and Simplicity hives slip right over them, protecting them from being chilled cold nights, and from the extreme heat of the sun during sultry days. To get the sections out, turn a case over on a table, then strike it gently on a couple of strips of wood (two top-bars of a frame, for instance), having these top-bars placed so as to strike each on the edge of the crate. As I have explained before, this crate holds 28 1½ sections, or 32 seven-to-the-foot sections. For nailing these crates together, we need 16 ½-inch wire nails; 21 ¾-inch wire nails, 18 1-inch, and 16 1½-inch.

DIRECTIONS FOR NAILING UP THIS CRATE.

You will notice that one edge of the sides and ends is smooth. This edge goes up.

First nail these pieces together with the 1½-inch wire nails, four in each corner; then slide the thin middle pieces into place. The lower edge of these should be just 5-16 of an inch from the lower edge of the side-piece. This can be done very easily by having a gauge-block or a piece of wood, say 1½ inch wide, 5-16 thick, and 12 in. long. These middle pieces are to be nailed with 1-inch nails. The strips of tin are to be nailed with ¾ nails; and those partly folded, with ½-inch nails, and clinched on the outside. Care should be taken, when nailing on the strips; for unless a board is placed for them to rest on, they are liable to move.

PRICES.

Single crate, nailed up, 20 cts.; 10, \$1.80; 100, \$16.00. Price in flat, singly, 16 cts.; 10, \$1.35; 100, \$12.00. These prices include the necessary strips of tin, and nails for nailing them up.

There are two objections to using the above crate in place of the combined crate advertised in our price list. The first is, that separators can not well be used in connection with them, or, at least, it will be so much more machinery to make and use a separator for every section. If you are going to use this crate, make up your mind to dispense with separators. Second, the bees have access to the bottom of every section. Our Michigan friends claim that the use of the honey-board prevents any wax of any account being put on the bottom-boards of sections. I would advise using these cases with 32 sections, seven to the foot. If you want to tier them up, of course you will have to have open-top sections; when not tiered up, just spread your enamel cloth over the top. If it does not lie down close, put a board on it until the bees fasten it. In tiering up, put this same enamel sheet on the upper tier.

I think these crates will answer very well for sending sections to market; and in lieu of a better case they will do to retail from. The partitions have the effect of holding sections very true and square. This is quite an item with the one-piece sections, for if they are true and square when the bees commence working in them, they will remain true and square after they are filled.

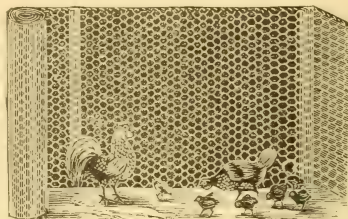
WIRE CLOTH FOR DIFFERENT PURPOSES, AT A LOW PRICE.

WIRE CLOTH FOR POULTRY INCLOSURES, AS WELL AS FOR SCREEN-DOORS.

AN enormous trade in wire cloth has started up since the job lots we have purchased. In fact, so many orders have come for the same lot that we induced a large manufacturer of wire cloth, by taking, at a single time, between \$500 and \$800 worth, to furnish us regular first-class goods at the same low figure we have been giving; namely, 1½ cts. per sq. ft. But in order to furnish it at this price it must be sold in whole lots, running from 100 to 400 feet in a piece, and running from 12 to 40 inches in width. This wire cloth is just the thing for screen-doors, for confining bees, or for any thing of the sort. As soon

as a lot is received, a list of the widths and number of feet in a piece will be published.

Well, while we have been about it we have also secured a very low figure for galvanized wire netting for poultry inclosures. We give a cut of this below:



GALVANIZED WIRE NETTING FOR POULTRY INCLOSURES, ETC.

This wire netting comes in rolls 150 feet in length and 4 feet in width. This would give 600 sq. ft. of surface, and we are enabled to furnish it at the low price of one cent per sq. ft., or \$6.00 for a piece. Staples for fastening to the posts are 20 cts. per lb., and a pound contains about 400 staples. The posts to hold it should be not more than 10 ft. apart, and it should be set in the ground at least 2 ft. You can put down a top rail, if you choose, but the selvage edge of the netting makes a pretty strong fence; and as the fowls can not see it they can not tell how high to fly; and after being bumped down several times they usually give it up. In putting it on the posts, draw the top of the netting tight, and afterward draw the bottom down and fasten that. You can put a board a foot wide along the bottom, if you choose. This will prevent small chickens from getting through, and makes the fence one foot higher. One advantage this netting has over wooden pickets is, that it does not catch the wind as they do, and therefore the posts are not so liable to be tipped over; besides, it presents a very much more ornamental appearance, as you will see by the cut. The meshes are two inches across; and where the wire crosses it is securely soldered together, for the whole fabric is immersed in melted zinc after the whole is woven together. The size of wire used is No. 19. This galvanized wire never rusts, so it will last a lifetime, unless it is damaged by carelessly running into it. If you want to make division fences, so as to keep different breeds from the same yard, it is better to have a board at the bottom at least one foot wide, so the fowls can not be gossiping through the wire, and pecking at one another. You will notice that one roll makes a yard nearly 40 feet square, and this is plenty large enough for 20 or 30 fowls. Another advantage this netting has over wooden pickets is, that you can see what is going on inside so readily. The wind, also, has free access, which is quite an item during sultry weather. It should be shipped by freight. The weight of a single bale is about 50 lbs. It may be shipped from here or from New York, as may be convenient.

AN IMPROVED DRONE-EXCLUDER.

SOMETHING TO LET THE DRONES OUT BUT NOT IN.

DURING the past year several inventions have appeared, to permit the drones to get out of the hive without any trouble, but arranged in such a way that the perforated zinc shall permit only the workers to return, making the device more automatic than it is, using only perforated zinc alone. One of the best of these is friend Noble's device, shown below.



NOBLE'S DRONE-EXCLUDING DEVICE.

You will observe, that at the lower edge of the perforated zinc a series of little doors is hung by a light hinge on a slender rod of tinned wire. These little doors are just about large enough to let a drone pass through, and they are made of tagger's tin, in order to have them very light. That they may open outward and not inward, the door is made to be a little long—that is, it projects below the edge of the perforated zinc, so that, when the zinc rests on the alighting-board of the hive, the little door stands sloping outward. We will now let the inventor describe it.

I mail you an invention of mine that I call a drone excluder. I should be glad to have you pass your opinion upon it. To use it, place it at the entrance of the hive, with the wire or hinge side out. You will observe that the doors are about one twentieth of an inch longer than the space, causing them to stand out at the bottom; and as the drones come pushing along they will raise the door and pass out, but can not enter again. D. C. NOBLE.

Larwill, Ind., Feb. 11, 1885.

The obstacle to the correct working of the machine would be rust, if left out during storms. This might be partially remedied by making the doors of thin sheet brass; but I am afraid that even brass would in time get to be rusted fast. Perhaps zinc rolled very thin might answer; but even zinc would rust enough to stick those light hinges. The inventor does not say how much he has used it, nor for how long a time. We shall be very glad indeed to hear from some one who has made use of these machines during a whole season. It seems to me something quite similar has been described in our pages, but I can not now place my hand upon it.

BROOD-REARING WITHOUT POLLEN.

THE RECORD OF AN IMPORTANT EXPERIMENT.

ISEE in the A B C book that A. I. Root believes that brood can be reared only when the bees have access to pollen. Also in the "Manual of the Apiary," Prof. Cook is very positive regarding such being the case. As something relative to the matter has lately come under my observation, I will give it to the readers of GLEANINGS.

Last fall I prepared one of my colonies of bees on the "improved plan for wintering," which was, to take away all the combs it contained, and give them only five frames. These five frames were selected with great care, to know that they contained *absolutely* no honey or pollen, and were placed in the hive so that packing could be placed all around them. The bees were then fed from 20 to 25 lbs. of syrup, made by pouring hot water on granulated sugar, nearly all of which the bees sealed over, as I found by examination when I fixed them for winter. The reason I took this extra precaution for their welfare was because they had a choice queen which I did not wish to lose. After packing they were left undisturbed until about the first of Feb., as I supposed it could not be otherwise than that they were wintering finely, as they had a good fly on both the 13th and 31st days of Dec. Imagine my surprise when, on Feb. 1st, as I looked at some of my bees which were out on their summer stands, to see that none were getting short of stores, I found this colony quite uneasy, and ready to fly out as soon as I raised one corner of the quilt to look for sealed stores. I thought perhaps that they were only out carrying honey into the cluster, and should have felt sure of this were it not that I detected the odor of bee diarrhoea. After this, extremely cold weather, with snow and high winds, kept me from looking at them for nearly two weeks, at which time I found they were reduced nearly one-half in number, and were in a deplorable condition, smearing the hive and themselves with excrement, while the foul odor from the hive was as bad as any I ever smelled from a diseased colony having plenty of natural stores.

I now kept watch of them daily, as I wished to save the queen if possible, when, upon Feb. 24th, I saw that they could not hold out longer, as all the bees were dead but about 200. These I took into the shop, caught the queen and caged her, when I shook the poor daubed bees in the snow, where they died in a few seconds in the zero air. Don't say this was cruel; for had I served the whole colony the same on Feb. 1st it would have saved them much of misery.

The caged queen I slipped, cage and all (cage was provisioned with the Good candy), under a Hill device, which was filled with bees in a strong colony, where she remains yet. Whether she is dead or alive, I do not know, as the weather has been so cold for the past three months that no handling of bees outdoors could be done. An examination of the combs revealed about 5 lbs. of stores still remaining, and brood in one frame, about the size of a silver dollar. By a careful examination of the dead bees on the bottom of the hive I judge that about 200 bees had lately hatched, for there were about that number of white fuzzy-looking fellows there. The brood in the comb was mostly sealed, with two bees just gnawing out of the cells, one being half of its length out of the cell. This brood was dead; for when the cluster got small they left the brood and moved to the sealed stores. I had always supposed that honey had enough nitrogenous substance in it so the bees could rear brood from it in absence of pollen, but thought otherwise of sugar syrup. But from this experiment it seems that brood can be produced where only sugar syrup is used for food. The death of this colony by diarrhoea also proves that pollen oftentimes is no factor in the cause of our wintering troubles, or, at least,

that bees can have the diarrhœa in its worst form where no pollen is present in the hive.

Last fall, when preparing my bees for winter, I noted the exact condition of each colony on a piece of honey-section, which note told how much honey and pollen each had, and how much sugar syrup they were fed, as all but ten were fed from 3 to 25 pounds. This piece was secured to the hive it belonged to, so that next May, or at this time as for that matter, I can tell, without guessing, just what the condition of each colony was 6 months before. By this means I expect to gain some knowledge regarding how best to prepare bees for winter after this, the most severe winter for many years, has passed away. 16—G. M. DOOLITTLE, 49—80.

Borodino, N. Y.

P. S.—16 years at bee-keeping; 49 colonies spring 1884; 80, fall of 1884, is the interpretation of above figures.

Thanks, friend D., for the report of your experiment. I know bees will do a little something at brood-rearing without pollen; but they have always seemed to me to act as if it were like scraping the bottom of the flour-barrel, when the pollen was all gone in the hive, and they could not get out to gather any more; that is, they seemed to scrape up enough material of that nature to go a little way, but they also seemed to suffer when being made to do it, just as yours did, although I never knew dysentery where their stores were entirely of sugar syrup. You say you took away all their *combs*, and gave them only five *frames*. We suppose these frames contained empty combs, although you do not say so. If it were a less careful observer than yourself, friend D., I should suppose there was a little pollen to be scraped up in these five empty combs. Twenty or twenty-five pounds of syrup should have been ample for good wintering, but I should like to know how late it was when this quantity of syrup was given them. Did the bees have dysentery badly enough when they flew out so as to spit the snow? and if so, did those spots have that dark reddish *pollen* color which we are so familiar with?

MORAL PATENTS.

FRIEND EWING GIVES US SOME THOUGHTS ON THE SUBJECT.

THE number of applications for "moral patents" that are being filed with GLEANINGS bids fair to rival the applications for legal patents at the Washington office. The title to these special privileges would be more expressive if changed to "sentimental" patents. The best morals of the community in all civilized nations are backed up by strong supporting laws behind them. The claimants of "moral patents" for Mr. Heddon's bee-fixtures are asserting their rights of prior discovery with so much assurance that it begins to look as if he would have to "step down and out" while somebody else steps up and in.

Some one has thought of or seen a cover, case, or honey-board like those Mr. Heddon has perfected and brought before the public, and perhaps has made a model and sent it to the publisher of a bee-paper to examine and report upon. The publisher noticed its reception, and placed it in his museum

of curiosities of the same class, and that is the last heard of it. This miscellaneous species of discovery benefits no one. Suppose Mr. Langstroth, Mr. Heddon, or any other prominent bee-keepers, had done no more than this toward placing their systems and fixtures before the public, of what advantage would they have been to bee-keepers, and what *moral* right would they have had to claim those discoveries, and the benefit from them, if, in after years, other parties in their search for improving the system had hit on the same plans, and, working out the ideas, developed a system of management, and by persistent effort introduced its many advantages to the world? These are the world's benefactors, and are entitled to any advantages accruing from their labors, and not the parties who have conceived something similar at some previous period and dropped it, no more to be named or used by them. A claim to royalty might with the same propriety be made on all bee-keepers who use a revolving window in their honey-houses, as on a reversible frame hinged at the middle.

The manufacture of bee-keepers' supplies has become quite a business throughout the country, and many parties who keep no bees, and care nothing for the industry, but having mills with wood-working machines, have, at trifling expense, fitted some part of it for manufacturing supplies. The fixtures most suitable before the public are appropriated by them, and run off, much of it shoddy work. They care not a rush who invented them. If they find the articles not covered by patents, they go ahead and manufacture, giving no thought or care for the *moral* right any other person may claim.

Government has enacted laws for the protection and encouragement of those who make and apply valuable discoveries in the mechanical arts, well knowing that the moral right is a rope of sand. When inventors of improvements in bee-keepers' fixtures patent their discoveries, and follow the old system of exclusiveness, the brotherhood are apt to let them severely alone. The bee-journals publish their advertisements, and remain silent about their peculiar merits. Few know any thing about them, few purchase them, and they fall virtually still-born. But suppose, in place of the "moral" patentee requesting supply-dealers not to manufacture his inventions, while he gives the privilege to all who make supplies for their own use, he procures a legal patent on his discoveries, and accords similar privileges to individuals. The bee-journals would admit his articles in commendation of his system as freely as they do those which are shorn of all legal safeguards, and for a similar reason. Their readers are given the privilege of making use of them free from various exactions. Supply-dealers who care little for the moral right would keep hands off, and the number who make their own supplies being comparatively few, the inventor would reap the reward of his labors.

FILTERS FOR CISTERNS.

The brick-wall filter mentioned in GLEANINGS is better than no filter, but a very imperfect affair. It will keep back the coarse dirt, but let through the fine. I have tried them. E. E. EWING.

Rowlandsville, Md.

Friend E., I know there are difficulties in the way of the *moral*-patent business. There are also many and great difficulties in the *legal*-patent business; but I think, too, there are very good things about both. Shall we

not try to avoid the evils of each, and hold fast to that which is good in both? I never intended to encourage the idea that we can dispense entirely with legal patents. Where a man has worked hard for a long while on some special idea, and has developed a new field of industry, I think it no more than fair that the government should give him a monopoly of this industry; that is, so far as he by rights is entitled to it. The trouble is with those who want large pay for a very little work, and I do not know but this is the great trouble in this world.

Friend E. strikes upon one point I wish to notice. Many bee-keepers have windows that turn over on simple pivots; in fact, they have many times spoken of them in our bee-journals. Now, where a man suggests that your bee-hive frame should be reversible in the same way, it hardly seems to me as if he ought to think of calling it an invention. I doubt whether our patent-laws would recognize such a thing as an invention; and while we are about it, has any one of us, *all by himself*, worked out a very great result in bee culture? I mean, since Father Langstroth gave us the movable-frame hive, and the Germans gave us the extractor and comb foundation; and in view of the facts that have been recently brought to light in regard to many of these inventions, shall we not be a little modest about saying, "Here, friend —, that is all mine, and I want you to let it entirely alone"?—I have for some time thought that the brick-wall filters were not quite equal to the filters made with powdered charcoal, or perhaps other disinfecting substances; but they are so good a thing I believe I would have them any way, and then have a better filter besides, if I wanted it.

Where a man invents something which he manufactures and keeps constantly before the people, I think it is a very good idea for him to have a legal patent on it if he chooses; but the traffic in patents that the real inventor does not care enough about, or pleads he has not the capital to manufacture himself, is, it seems to me, the curse of the system. If a man has invented something good, let him manufacture it, and place it before the people, and develop it, getting a patent, if he chooses, to keep others from interference.

HIVE-COVERS AND OUTDOOR FEEDING.

OUR FRIEND C. C. MILLER GIVES US HIS OPINIONS AND EXPERIENCES.

WITH only a few colonies, the weight of a hive-cover is a small matter. When, however, it comes to lifting off and on fifty or more covers daily it gets to be a serious matter—a matter of backache; and the covers I have lately made, I have had made as light as possible, 4 lbs. each. They are covered with white oil cloth, and have stood very well for two seasons. Perhaps after two seasons they will need re-covering. I have never succeeded in making a cover of matched boards water-tight, with any amount of paint, so these oil-cloth covers are a comfort to me

in that direction. Their lightness, however, didn't seem so nice when one very stormy day I was kept busy a good share of the day in picking up covers and cloths blown off by the wind.

In our discussion of Heddon's covers, what appears to me a serious objection has not been mentioned. If I remember rightly he has stated that he keeps a 15-lb. stone on each cover, so of course they don't blow away. I would rather, however, have a 15-lb. cover; and as I have already intimated, that's a thing I can't stand. If some cheap device would hold the cover tightly in place, taking little or no time to fasten and unfasten, I think I should like the Heddon cover, especially for covering any thing like the Heddon supers.

OUTDOOR FEEDING.

For the last two years I have fed pretty largely in the spring, up to the time fruit-blossoms came. I used best granulated sugar, making a thick syrup, to be thinned as used. After trying the use of a lamp to keep the feed warm, I discarded it for what I thought a better way. I used for feed-dishes, dripping-pans and milk-pans, and finally had some square milk-pans made, about a foot square and 4 inches deep, made slightly flaring. For floats I used this: Take a thin board which will just fit loosely in the bottom of the pan; let it be of $\frac{3}{4}$ thickness, or perhaps half that thickness would be better. Then take a sufficient number of strips of $\frac{3}{4}$ stuff, as long as the width of the board, and an inch or more wide; nail these on the board with wire nails about $\frac{1}{4}$ inch apart, driving the nails through the boards into the strips, of course having the board uppermost while nailing. When done, place the float in the pan, board side down, and, if rightly proportioned, it will sink into the feed just enough to have a shallow depth of feed all over the board. The strips will, of course, stand up nearly an inch out of the feed. A square piece cut out of one corner leaves a hole in which a funnel can be placed, through which to pour the feed. One of these feeders will do for every 10 or 15 colonies. As I had a good many to feed I kept the stove reservoir filled with hot water, and kept two kettles on the stove to be alternately filled with syrup. Some hot water being in the kettle, about 10 lbs. of sugar was sprinkled and stirred in. When the grains of sugar were dissolved, some of this hot syrup was put into a common watering-can, the rose being taken off, and about twice as much hot water added to the syrup. Then, throughout the day, as often as a feed-pan became partly emptied, the hot syrup was poured into it through the funnel, thus going under the float, and warming up the cooler feed in the dish. If the funnel was not used, many bees were scalded. One thing that surprised me was, that, the best I could do, the bees never carried in an average per colony of half a pound of sugar in any one day. Some of the colonies showed very plainly great benefit from the feeding, and these were perhaps all strong colonies in the first place, made stronger by the feeding. Others showed no benefit whatever; and is it not just possible that some of these never found the feed? Possibly these last colonies would have done better with feeding in the hive, and I am thinking somewhat of trying this spring the old-fashioned way of filling combs with syrup to put in hive, and not feed neighbors' bees.

C. C. MILLER, 200—235.

Marengo, Ill., March 9, 1885.

You have hit the difficulty on covers ex-

actly, friend M. A light cover is very desirable, but covers that blow off are not. Years ago we used to have our covers hinged, and afterward we had them held in place with hooks; but in trying to devise some other arrangement that would permit any cover to be used on any hive, or any hive used either one or two story, we finally concluded we would rather run out in the storm and put the covers on the hives once or twice a year, than to go to the great expense and bother of hinges or hooks and catches. The Van Deusen clamp is a pretty good idea, and several other similar arrangements have been before the people; but I do not believe any of them used them any great length of time. A wire, or other spring, might be made so as to snap into the hand-holes of the Simplicity hives. This would hold them in place; but when the hives were piled up close together for shipping or other purposes, these springs would be more or less of a hindrance. I did not understand that friend Heddon kept a stone on top of the hive; but such covers would, in our locality, be very much trouble indeed, by being blown off. A cover that fits down over the hive, like the Simplicity cover, and one that has no ledges for the wind to catch under, is not very apt to be blown off. The chaff-hive covers are rather worse about being blown off than the Simplicity; but it takes almost a gale to disturb either of them.—The great trouble with outdoor feeding is as you state—some colonies get a great lot of feed, and others little or none.

THE WINTERING PROBLEM IN APICULTURE.

WHAT ARE WE GOING TO DO ABOUT IT?

ILL success in wintering is the one obstacle in the way of successful apiculture. Whenever we experience a winter like the present one, when for days and weeks we mark the figures denoting temperature with a minus sign, terrible and widespread disaster is sure to visit bees, alike in apiary and forest. Long zero weather, and sound healthy bees, seem rarely in accord. Judge Romsdel, the prince of plum-growers in Michigan, blesses Providence for the curculio. He says the "little Turk" will always be kept in bounds by the wise orchardist; and in years of plenty will, or can be made, to do most wholesome thinning, more cheaply than the same can be secured in any other way. Furthermore, the little weevil will bring utterly to naught the efforts of the ignorant, idle, or careless grower of plums, and so the price of this fruit will always be at a top figure.

The winter losses in apiculture may be regarded in the same light. Intelligent care may ward off the evil, and so not only raise the price of both bees and honey, but weed out of the business such as are sure to dishonor any calling.

For years I have been persuaded that severe and long-continued cold is the chief inducing cause of bee-diarrhœa. The direct cause seems to be indigestion, and excessive retention of the feces. This being granted, as it must be, I think, by every close student of the subject, and we must conclude that kind of food is no mean element in the production of this dread malady.

Bees are natives of a warm climate; yet, like all domestic animals of wide distribution, seem well prepared to brave and endure no inconsiderable extremes of temperature. In California, the Southern States, and the warmer parts of Europe and Asia, this wintering difficulty is unknown. The same is true in warm winters at the north of our country and in Canada. Even in winters when rigorous cold comes for short periods, broken in upon by intervals of warmth, permitting the bees to fly, the bees seem to pass unscathed. Again, in Canada and our extreme Northern States, bees are often wintered by means of good cellars or other protection, even during the severest winters, with no loss. Many bee-keepers have no more fear in wintering their bees than they have in wintering their flocks and herds. All this seems, conclusively, to show that long severe cold is the great inducing cause of the dreaded bee-diarrhœa.

How can we explain this? Bees, in normal conditions, never void their feces in the hives. In warm regions they can fly so often that there is no need of such avoidance. If confined, even for long periods, in a rather mild temperature, they keep *very* quiet, their vital activity remaining at the minimum. Thus they eat *very little*, and of course the excreta is almost nothing. Several times our bees have gone from November 1st till April 10th, and consumed not more than two or three pounds of food per colony. In such cases nearly all food is assimilated, and all refuse passes off as gas and water. There is no loading of the intestines, no occasion to void excreta. This is especially true when all the food is of the carbohydrates—honey or sugar syrup. Within the past few days I have taken several bees from hives in our cellar. The bees look bright, small, and there is no appearance of disease. Upon examination I find their intestines almost empty. Only a little whitish liquid is seen. Of course such bees, in such condition, have no need to extrude excreta from their intestines.

Yet bees never hibernate in winter. They are always active, and apparently wide awake. They must preserve their animal heat. If the air surrounding the hive remains for long periods at a very low or very high temperature, the bees are irritated. Cold acts as a tonic; they move, and must eat. Too great warmth excites, and they also eat. If for any reason they eat much nitrogenous food, as pollen, the intestines become loaded with the indigestible or undigested matter, and, as in case of all animals, such excessive retention of fecal matter produces serious disease. The bees, contrary to their habits, void their hives. Even habit is broken down by the severe irritation of the distending excreta. From bees sent me by Mr. James Heddon, a few days since, which are dead of diarrhœa, I find the intestines crowded with a putrefying mass, swarming with bacteria, giving off the usual diarrhœic odor, and crowded everywhere with pollen grains. Pollen from the hive where the bees died shows pollen grains identical with those in the intestines of the bees. Severe cold induced over-feeding. Quite likely they craved the pollen as we crave our beefsteak in winter. That they ate pollen, is sure from its great abundance in the intestines. From the fact as noticed by me now for several years, that bees are more apt to be diarrhœic when they have and eat pollen, indicates, as we should suppose, that such food—albuminous—would be more provocative of mischief. Within

the past week I have examined the fecal matter in bees dead of diarrhoea, from the apiary of G. M. Doolittle, of New York State. The familiar odor, and the swarms of bacteria, were seen as before, but no pollen grains. Here there must have been albuminoids, else there would have been no bacteria. Bees get nitrogenous food from other sources than pollen, and quite likely these bees had access to such. Some of these bees sent by Mr. Doolittle had abundance of pollen grains in their intestines. This shows that pollen and diarrhoea are not constant companions.

Again, I received bees from James Heddon, victims to the cold winter, which were fed entirely on sugar syrup. In these bees we find the syrup so entirely undigested that the characteristic sugar odor and taste is very marked. I asked one of our professors, who knew nothing of the matter, to smell of some of the bees. He said, "That is sugar." Cold irritated the bees. They ate ravenously to stay its dangers, and, failing to keep up a sufficient temperature, died of indigestion. We see, then, that cold with any kind of food may induce the fatal malady. In this last case the usual odor of diarrhoea was entirely absent. Nor was there the excessive distention noted in ordinary diarrhoea. Of course, with nitrogenous food or poor honey the disease would appear sooner, and be sooner fatal.

The practical conclusions to be drawn from the above are almost self-evident. In the northern part of our country, where very severe and prolonged cold in winter is becoming the rule, the only safe way is to provide cellars where a uniform temperature of about 45° F. can be maintained irrespective of the outside temperature. Chaff boxes and winter packing may suffice for the most part, but will not prove sufficient in our coldest seasons.

Again, good food, either pure honey or pure cane-sugar syrup, is safest. Not that bees may not winter with plenty of pollen, or not that they may not die with no pollen; but from our experiments, as well as what we know of foods and the habits of bees, we can easily believe that food without nitrogenous elements is safest in winter for bees.

Of course, some colonies of bees, like some men, may possess such an excess of strength and vigor that even cold and poor food may be powerless to work evil. Yet this does not argue against the facts as stated above.

I have said nothing in this paper as to dampness or ventilation. It is presumable that a dry, pure atmosphere, is best for bees. Yet the fact that I have known bees to winter year after year in very damp cellars, with no loss, and that I once wintered bees in a snowbank, during one of the most disastrous winters, with the hives tightly sealed with propolis above, and with ice below, and never knew bees to winter better, makes me wonder if we should have to heed moisture or ventilation, in case we secured proper food and exactly the right temperature.

A. J. COOK.

Agricultural College, Mich., March 13, 1885.

Friend Cook, I like your opening remarks very much indeed. It strikes right on a point where for some time I have been thinking. Especially has it come home to me with strong conviction since my visit at the South. The point is this: The difficulties we meet in all our separate industries are in one sense blessings. Our friends in the South (who have no trouble with wintering,

no trouble with zero weather in their attempts to raise fruits and garden stuffs with all these great aids) do not by any means accomplish as much as we do here with our unseasonable zero weather. A zero temperature punishes the shiftless; but to the earnest, zealous, thoughtful, hard-working man it is a positive help. Let us, then, laugh at storms, coming even in the latter part of March, as they do now while I write; let us laugh at insect enemies, and let us thank God for all these obstacles that only serve to teach us great truths, and to have faith that they come from the loving hand of the kind Father above. You speak of a uniform temperature of about 45 degrees. I have mentioned elsewhere that the Mammoth Cave averages about 55 degrees—no difference at all, winter or summer. Is not 55 better? I can testify from experience, that it is a very comfortable temperature for working, without being encumbered with overcoats or winter covering. The temperature is not unpleasant to sit down and rest, when you are tired. I presume if we go down into old mother Earth far enough to be free from external influences we can always depend on 55 degrees; and it seems to me it is not going to be a very hard task to do this. Bats cluster in great numbers near the mouth of the cave, and stay six months without food or exercise. Very likely, though, they go in when they are in flesh, and come out spare and lean. I believe I entirely agree with the deductions you draw from the valuable experiments you have given us.

FRIEND WIGHT'S UPS AND DOWNS IN BEE CULTURE.

HOPES NOT BLASTED, THOUGH THE LOSSES HAVE BEEN MANY.

FRRIEND ROOT:—You may not care about my coming, since I have no sunshine to bring you; when, too, you have such an accumulation only awaiting their turn in "Blasted Hopes." I did not care so much about my former loss, when, under Mr. King's and Mrs. Tupper's plan, I had built up a small apiary in the old American hive, because that gave me the opportunity of changing my plans and style of hive.

Years went by, and in the fall of 1880 I had 110 colonies, mostly Italians, on the L. frame. I actually sat in my chair under an apple-tree, leaning and musing over the lines:

"How doth the little busy bee
Improve each shining hour,
In gathering honey all the day
From every opening flower!"

Neither did they nor I think of the disaster that was awaiting them. By April I had only 17 colonies left. The following year was a good one, and, by the aid of the empty combs, they increased rapidly, when, at the end of the season, I had about 40 colonies and 1600 lbs. of nice section honey. Since then I have been successful, both in surplus and in building up. Also a fine trade has been established for my honey at home. Last fall I had 140 colonies, but no surplus. I united them to about 100, fed them 3 bbls. of granulated sugar, packed them with chaff, and to-day I find 5 alive out of 40. From these I

know the fate of the others, except 15 that are in the cellar.

"Storm-king passed by their darkened door."

If these 15 should live till May flowers offer their precious cups of nectar, the children may still have honey on their bread and butter.

Shall I quit? If I do I shall not be much the loser financially, calculating from the beginning; and I think I am wiser and better from experience and after reading our wise and prudent apiarists. Their terms are almost household words; from "Harbison's sandy strain, from Perrine's floating skeps, and the dizzy heights of the tiny towns of King and Muth to"—the perfected "home of the honey-bee."

Bedford, Iowa, Feb. 28, 1885. MARCUS WIGHT.

Friend W., I should say, by no means quit. If cellar wintering turns out the best in your locality, winter in the cellar; but, have you given nicely made chaff hives a thorough trial? Yesterday morning, while waiting for the train, one of our bee-men at a neighboring town remarked that he had already lost 20 out of 40; but on further questioning he admitted they were in Simplicity hives, and he was not sure he fed them enough in the fall. Our apiarist reported Thursday, March 5, that our 198 colonies had all passed safely through the severe weather of the past eight weeks. At times the thermometer has been 18 degrees below zero, and it was below zero more or less every few days for a period of five or six weeks; but, as I told you last fall, they were put up in excellent order, and had every thing just as it should be, or as near as we knew how.

OUR FRIEND GALLUP AGAIN.

He Tells Us Something About the Great Honey Crop of 1884.

IS CALIFORNIA A GOOD PLACE FOR A MAN TO MAKE A LIVING?

THE article on page 25, Jan. No., has called out scores of letters of inquiry; and if you will allow, I will give some statements of general interest. The aggregate yield of honey in 1884 for California is about nine million pounds—enough to give every man, woman, and child in the United States a feed of California honey, and still have some left for company. A writer in one of our papers says it would load 600 freight cars, or a train nearly 5 miles in length; or, put up in a style of bottle largely used here, and placed 8 feet apart, it would reach from San Francisco around the globe, and meet again at the Golden Gate, and still there are millions of tons of this sweet not gathered, for reasons that I can not stop to enumerate now.

The most frequent question that I am asked is, "Could I, with 1000 or 1200 dollars, make a comfortable living in California?" With that amount you could purchase a bee and stock ranch combined, and already stocked with bees. I know of three places now, and two of them are within one mile of a schoolhouse, and the other is within one mile of the celebrated San Juan hot springs, where there are from 300 to 500 campers, every summer. But if you could not make a living with that amount, it would be the easiest thing out to let some sharper get it away from you, and without it you could certainly get a good living.

My oldest son has been out here on a visit from Northern Iowa this winter; and what astonished him was, that he could not find a single person that wanted to go back east to live. We tramped some ten days among the bee-keepers, and the most of them came here broken down in health, and without money, and have gained their health, and have good homes, and are perfectly satisfied with their lot. Health is worth every thing; and as near as I can learn we have the most healthful climate in the known world. While we were tramping we saw a large swarm of Italian bees with their combs, brood, and stores, all built on a bush right in the open air, and within two rods was probably the parent stock in a hollow live-oak tree. This was the 13th of February. The comb looked clean and nice. It was about 18 inches from the ground, and the sheets were about 18 inches long. The colony was a powerful strong one, and they were carrying in the pollen on all sides at a wonderful rate. We left them there undisturbed. There is no patent on that hive.

Bees are in remarkably good condition; and if we have but a small supply of spring rain which we usually have, the season must be a good one. A man can stick down a fig and grape cutting here, and then (literally) sit down under his own vine and fig-tree, and there is none to make him afraid.

I am nearly 65; came here 8 years ago, completely broken down in health; have regained my health, and am strong and vigorous, and would not hesitate to commence again with 50 dollars, or even less, and raise an orchard that would astonish an eastern man as to growth and productiveness in three years.

E. GALLUP.

Santa Ana, California.

Thank you, friend G. At the bee-keepers' congress in New Orleans there was some stir about the extravagant reports made about California, and I believe the decision was, by those who ought to know, that considerable exaggeration had crept in somehow. Those who are restless and uneasy, and want to find a better country, should always keep in mind that some people will make a living anywhere, and help others to make a living; and then, again, there are a great many who *won't* make a living anywhere, but who will hinder others a good deal. This latter class would probably only waste more money by moving to California. We are glad to rejoice with you in your great honey crop; and one of the best things about it is, that it is *beautiful* honey too.

WINTERING BEES.

OUR FRIEND DAN WHITE UTTERS SOME WORDS OF WISDOM.

THIS problem has been discussed enough to have the thing solved; but as this has been a severe winter, and bees have suffered by it, the pollen theory and every other theory will come up again. As far as I can learn about here, there has been a general cleaning-out; especially bees in single-walled hives are all or nearly all gone. I expect to hear like reports from all the Northern States. Some have lost heavily in chaff hives. I have to report a loss of 7, being the first time for me to lose a colony in a chaff hive. I

have always said they were a perfectly safe hive to winter in, no matter how cold it might be, and I now feel prepared to say, having more confidence than ever, that bees will never die wintering in a chaff hive, if the bee-keeper will do his part. It will not do to leave or neglect any part of the preparing for the winter campaign. It may be natural to judge others by one's self, so I will tell you some of my thoughts when preparing bees for winter.

I find it takes time, and is somewhat laborious, to do the thing right; and as I go along and come to a hive not recently handled, combs somewhat fastened together, bees cross, etc., I say to myself, "Last winter was so cold that this winter will be easy, and will let you go just as you are, by merely putting in the chaff cushion." So I go on, missing every once in a while one in this way. I know by actual experience this will not do. How many bee-keepers are there who never handle the brood-frames, and, especially in the fall, fix them the easiest and quickest possible way, or let them go without doing any thing? I knew of several who have invested in chaff hives, and have done so contrary to my advice. I well know they would expect the hive to do it all. Well, this spring finds them with the hives minus any bees. So it goes about here, and is it not so elsewhere?

I last fall experimented with four colonies in chaff hives, giving stores composed entirely of honey-dew, or "bug-juice," as some call it. Every bee in those hives was dead three weeks ago; the three other dead ones were left on the guess-so principle, then I have probably 15 that will need good diligent nursing to make them what they should be by the time honey comes.

I find in every instance, where I last fall did my duty, all is well. In short, my bees have suffered just in proportion to my carelessness.

I told you about the easy winter I had in my mind. Well, to save the expense of 13 chaff hives, and fixing the weather all right, I started in with 13 colonies in Simplicity hives. I used two division-boards in each, a good warm cushion in the top hive, fixed ventilators also, and took pains to give nice stores; but all to no purpose, as nine are dead, with fair prospects of losing the other four. Ten days the last of February, with mercury every night from 6 to 16° below zero, and scarcely above zero any day during the time, is when these bees ceased breathing. Now, after this I promise myself to every fall prepare my bees for waves of this kind; for bees on summer stands, unless protected, can not stand such weather.

I will close this now, as this morning, at 6 A.M., March 17, mercury stood exactly at zero, and a later report may not look as well as the one I have given. I have 105 chaff hives with bees in now.

New London, O.

DAN WHITE.

Well done, friend Dan. Such letters as yours are hopeful, and I am sure you are right. Your remarks need to be placed alongside of Prof. Cook's, in another column. It is not so much that we want more light or more ventilation in regard to this subject of wintering, as it is that we live up to the light we have already, and to act up to our own convictions. This 20th day of March the thermometer is 4 degrees below zero, and last evening it was 8 below. Now, then, we want to go to work every winter with the

expectation of having the weather possibly 8 or 10 degrees below zero as late as the first of April. Let stores, chaff packing, and quantity of bees, be sufficient for just such a contingency. When the weather "lets up" a little, we will tell you how our chaff hives have stood this last blizzard.

A REPORT ENCOURAGING AND DISCOURAGING BOTH IN ONE LETTER.

WHAT SHALL WE DO WITH BEE-HIVE THIEVES?

I COMMENCED last spring with 4 hives; increased to 18 by natural swarming. The season was not good for honey; the spring was wet and cold; and when white clover came there was no honey in it. Basswood very little, and then the latter part of the season was so dry it seemed as though every thing must dry up. However, I got nearly 400 lbs. of comb in 1 lb. sections, and all went into winter quarters with full supplies save three. Two I took up, as they were drone-layers. The third one went to supply some one who does not live up to the golden rule. Talk about being liberal, as some do in GLEANINGS, as an antidote for thieving, may do in some cases; but kindness and liberality are worse than thrown away on some. Some talk of setting guns. Well, this is wholesome argument for some; but before I would resort to that I would do as one of my neighbors did; viz., go out of the business.

I have always given freely to all in reach of me, and have sent to them when not asked for; but as I said before, kindness and liberality are only thrown away on some people. They took this hive from me, a Simplicity upper story full. Had they been content with surplus contents, and left my poor bees alone, I do not think I should be writing of it now; but after taking all the contents out they piled the hives up and burned all, a large swarm, and a valuable Italian queen, and that within a stone's cast of my house. If they keep up their wanton destruction, you will have one customer less, and they be compelled to forage somewhere else.

How the bees are coming out this spring, is hard to say as yet. Some have lost heavily; some more or less. I have 8 in cellar and 7 out under the snow, totally out of sight. Those in cellar are all right, and I have no fear for those under the snow.

I took not a little pains last year, by inquiring of those who lost heavily, and found that an average of 7 black to one Italian was the result. I should like to know how it is in this respect in other parts, where they lose so heavily by reason of the cold.

Did you ever know a swarm to leave after filling their hive most full? A neighbor of mine tells me he had one, after being lived ten days, leave pell-mell for the woods.

CLIPPING QUEENS' WINGS.

Take a small bush, sharpen the stub end, stick close to the bottom-board, but leaning from the hive; and when the swarm issues, the queen, being unable to fly, will run up the bush on the return of the swarm. They will cluster around their queen, you can just pull up the bush and carry all to the hive, and the work is done.

H. L. BOSS.

Caro, Mich., March 16, 1885.

Friend B., you did wonderfully in increasing four hives to eighteen by natural swarm-

ing, and getting 400 lbs. of honey. Your locality is certainly a good one, and I guess you are a good hand to take advantage of it. —In regard to thieving, which you think can not be helped by kindness or any thing else, did you never hear of a promise that, if we do not weary in well doing, we shall in the end come out victorious? I am not sure that I have very much faith in giving honey or any thing else to bad people in order to make them good. Sometimes you can invest honey and money in that way to good advantage, and I would by no means overlook such ways of working to restrain sin. Please do not accuse me of harping on the same old story when I say, that the description you have given of your locality indicates most clearly that you have a class of people that need educating and Christianizing. Have you plenty of schools, and are all the children obliged to attend at least part of the time, whether they will or not? Have you churches and Sunday-schools in your vicinity? and have you Christian workers who are working steadily and faithfully, going over the whole ground completely, to see that all children who do not go to Sunday-school are visited, and not only that, but that their parents as well are labored with? It seems to me there must be a gang in your vicinity who are preparing themselves for the penitentiary, and who, perhaps, have for some time held themselves so much aloof from Christian people and Christian influences that they hardly know that such things exist. The responsibility lies upon us all; we *are* our brother's keepers; and if we evade and shirk these responsibilities, sooner or later God will punish us in just the way you have pictured out. It was this same kind of evasion of responsibilities that brought the children of Israel into captivity in olden times, and the same thing kept them there. Shall we consent to be captives, and let this spirit of evil congratulate itself that it has driven us from the field of bee-keeping, and other like industries?—Your idea of a bush in front of the hive is tiptop, friend B., and I think the suggestion is a new one. Will some of the friends try it and report?

MANUFACTURED HONEY.

IS THE WHOLE WORLD A FRAUD AND A CHEAT?

INCLOSE you an article, headed "Manufactured Honey," copied from the *Philadelphia Times*, which I should like to have you notice, and make some comments upon. Is there any such process for manufacturing comb honey? I should think that a little more than human skill could accomplish.

S. AMBROSE.

Ash Ridge, Wis., March 2, 1885.

Friend A., there is no process for manufacturing comb honey, and the *Philadelphia Times* people ought to be ashamed of themselves for publishing such disgraceful foolishness. My opinion is, that the whole thing is gotten up by some reporter, to make a sensation. I do not believe any *bona-fide* dealer ever told any such stuff. We give the article in question below:

The adulteration of food has been practiced to such an extent that purchasers no longer expect to get a pure article, even when paying the highest prices. It is generally supposed that two-thirds of the milk sold in all our large cities is deprived of half its cream; it is known that butter is made from beef fat and cotton-seed oil; maple syrups have lately been made from almost any thing of a sweet nature, and now it is stated that most of the honey we eat is manufactured, and that much of it has not even a drop of genuine honey about it. This alleged honey was first sold in this city some five or six years ago. Its sale at first was scant, but for the past two years it has become very popular, and it is claimed that there is now little else to be found in the market. Some of it is sold as manufactured honey, though a great deal of it is dealt out to the unsuspecting purchasers as the natural product of the honey-bee.

The spurious kind is usually put up in little square boxes, which sell for from twenty to thirty cents a pound. It looks like honey, and it is said that it takes an excellent judge to tell that it is a fraud on the bee. The comb is manufactured with such skill that but few can tell it from the genuine article. It is made from paraffine or beeswax, and the honey is blown into it by machinery. Another kind is put up in glass vessels like ordinary jelly-packages, the center of which contains a piece of honey-comb, and the honey is made by pouring about six parts of glucose around one part of honey in the comb. Some of it is adulterated with glucose, some with cane sugar, others by heating ordinary sugar with an acid; but it all resembles honey, and to a certain extent has its flavor and odor.

"Of course, it is not so good as genuine honey," said a dealer, when questioned about it, "but it is cheaper, and the parents prefer it and the children cry for it. I sell a great deal of it, but my customers all know what they are buying. Yes, it is a fact that many prefer butterine, made from pure fat, to much of the country butter brought to market. They seem to think they know what the butterine is manufactured from, while they have their doubts about the manner of adulterating country butter. I suppose they think the same way about honey." Further inquiries revealed the fact that manufactured honey is sold extensively in the city, and especially in neighborhoods where the poorer classes reside. In some places it is temptingly displayed, and the dealers push it on account of the large profit in it. In most instances, however, it is sold as manufactured honey.

Some dealers decline to sell the spurious kind, although they admit that there is a large profit in it, and that it is becoming very popular. An up-town groceryman who refuses to handle it, says it is poisonous, and predicts some startling results from its use. On the other hand, it is claimed that it is not as dangerous as genuine honey. A dealer in the adulterated kind, who displayed his knowledge of both chemistry and history, says that it is a well-known fact that sometimes poisonous qualities are taken from the flowers by bees, and find their way into honey, which has been known to produce dizziness and sickness. He referred to the fact that soldiers of Cyrus once met with a honey of this kind, and that it came near destroying the entire army.

The color and odor of genuine honey are due to the character of the flowers from which it is taken. It is said that the Vermont honey is as clear as pure water. This honey, which is celebrated all over the country, is taken from white clover. A delicious honey is also taken from the orange-groves of California, but this has been so successfully counterfeited that it is now difficult to tell the bogus from the genuine. Wherever bees feed upon buckwheat they produce excellent honey, it matters not what climate it may be in. Some of the best honey sold in the Philadelphia market comes from Chester County, while that from Lancaster is also excellent. But the spurious kind sells more readily, presumably on the ground of economy.

The originator of the above string of outrageous falsehoods ought to be hunted out, and held up before the world. In regard to the report of the California honey being adulterated, we copy the following from the *American Bee-Journal* of March 18:

"Some outcry has been raised in England about 'glucose California honey,' which is not only base-

less, but senseless. The proof of this is, that the article of glucose laid down in California is worth quite as much as the honey itself. Therefore, add to this cost the additional expense of tanking, mixing, the cost of new packages which would be required, all told, say 2½ cents per pound, it makes a total cost of, say 6½ cents, when the pure honey itself can be bought at 4½ cents.

It seems to me as if the spirit of the evil one himself were running rife among the newspapers, in their efforts to make out that everybody but themselves is all the while up to some sort of trickery and fraud. The article quoted from the *Philadelphia Times* above says: "It is generally supposed that two-thirds of the milk sold in our large cities," etc., and that "most of the honey we eat is manufactured;" "not even a drop of genuine honey about it." Well, my opinion is that the people who affirm such falsehood and villainy as the above, generally judge their fellow-men by the blackness existing in their own evil hearts. Because they would adulterate and steal whenever an opportunity of any sort offered, they think the world are all just like them.

In this connection I feel moved to mention something I once thought I never should mention. At the bee-keepers' congress in New Orleans, a man we all know so well by name, C. O. Perrine, wanted to speak. Well, although I did know something of the man's past character, I did not know, and it did not even occur to me, that we had a man in our broad land who had the unblushing effrontery to get up before an intelligent audience, and brag of the way in which he had told lies, and swindled the people of America. He told about how he had put up sugar syrup, and sold it through Cincinnati and other cities, labeling it "Pure Honey," and then boasted, too, that when glucose came into market he sold stuff in glass jars, consisting of from 50 to 70 per cent glucose, labeled it "Pure Honey," and put his name on the label. He did all this without even a trace of color on his face to indicate that such a thing as shame could find a lodging-place in his vile heart. He closed up by saying he was out of the business. No wonder; and I felt almost sorry he could stand there before a group of intelligent and honest men, letting them know that he was, contrary to his just deserts, outside of the penitentiary walls. I have heretofore taken Perrine's part somewhat, for I could not believe the stories that were told about him; but he stood up there and seemed to enjoy telling worse things of himself than anybody had ever told about him. In closing up he did not even claim that he had left off his wicked practices, or proposed to do so. He had simply gone into other business. Is it any wonder that people are suspicious, and somewhat ready to credit these newspaper stories, when things like this come to light? When you want to buy honey, or any thing else, be sure that a good man's name is on the label. Thank God, we have plenty of good men left—men who will live and die honest.

It was some years ago that Perrine was in this wholesale business of adulterating honey; but even at the high price of honey and the low price of glucose, it seems he did not make money, and I should suppose that pres-

ent pay was all that such a man ever thinks of. I do not know of anybody now who makes a business of adulterating honey. The Thurburs put a piece of comb honey in a glass jar, pouring a fine article of glucose around it; but a label is put on, explaining that this surrounding liquid is "corn syrup." I am sorry to say, however, that the "corn syrup" label is not as conspicuous as it might be. I do not believe any man ever fails in business because he has been too honest. The lives of our successful men will bear me out in this, as everybody will admit.

BEE - KEEPERS' CONGRESS AT NEW ORLEANS.

Continued from Last Number.

LATE in the afternoon of the 25th we came to the end of our long journey, and stepped from the cars to the platform, in the city of New Orleans. On our left lay the veritable steamers with their heaps of cotton bales, and on our right was broad Canal Street, running up into the city. Ernest and I felt for a time like a couple of strange "cats" in an enormous "garret." Zero weather and the snow-clad fields were gone in very truth, and yet I could not make it seem possible that the weather had not changed, and that our folks were having green grass and sunshine away up in Ohio. There was no time to waste. It was in the afternoon of the second day of the bee-keepers' congress, and so we hunted up a lodging-place that had been recommended to us; and as soon as we had deposited our cumbersome overcoats and other useless traps, we jumped on a street-car for the Exposition grounds. These street-cars were literally chasing each other all the while between the city and the grounds. It is a good thing they are, too, for it is very convenient indeed to be able to find plenty of room to sit down and look out of the windows at your ease. Pretty soon my eye caught a sight of the watched-for orange-trees, laden with fruit, and many were the exclamations of surprise. The people seemed very pleasant and sociable. They had doubtless become fully accustomed to the expressions of the Northerners. Our bee-keepers' badges once or twice called forth some expressions of curiosity, but they did us good service in helping us to recognize bee-men when we passed them. Every thing seemed to me so much like the Centennial of 1876 that it does not seem as if it would be worth while for me to attempt to describe it all. It is pretty much like the expositions we have now in all our large cities, only, as a matter of course, it is on a more extended scale than the world has ever seen before.

The grounds and the greenhouse were special attractions to me, but Ernest did not care so much for them. In the way of manufactures, one can see almost every thing going there that is to be witnessed on the face of the earth. Exotic plants, and plants from every part of the tropics, and from almost every part of the world, were to be found growing there outdoors, or in

the greenhouses. But the things are brought together more for curiosity than to demonstrate what can be done in the way of improved agriculture. It seems to me they ought to have employed Peter Henderson to show them what could be done in the way of market gardening in such a climate and such a soil. Although almost all kinds of garden vegetables could be raised outdoors without any trouble, I did not see any, either on the grounds or in the city, that I thought were really extra. The productions of improved agriculture from the different parts of the Union, and from different parts of the world, were collected in the Government buildings, but I had some way got it into my head that I should see things growing, and improved agricultural machinery there in actual use, but I did not find it. Beautiful cultivators, seed-sowers, sulky plows, and the like, were on exhibition from every part of the world, but none of them were actually at work in that beautiful soil; but may be they will get to it after a while. Some beautiful beds of flowers were in bloom on the grounds, and collections of bulbs were especially attractive; but there was too much of an air about them as if they were taking care of themselves. Dr. Besse's apiary looked a little that way. There were 50 or 100 hives of bees scattered over a nice plat of ground; but the biggest part of the hives were unpainted, and those had evidently been in use several years. I suppose the doctor was pretty busily occupied in the buildings most of the time.

Notwithstanding the lack of these few things I have mentioned, the Exposition at New Orleans is all that has ever been claimed for it, and more too; and the complaints that have been made in regard to some of the minor features, I think are unjust and undeserved. We found nothing lacking in the way of entertainment while in the city. People were kind, courteous, and obliging; and if there was any drunkenness I did not see it. In fact, I saw more of Satan's work in walking the length of one street in Cincinnati than I saw during my whole trip of over a week through the Southern States.

When we first went on the grounds we were greatly tempted to loiter about and see things, but we knew our first duty was to report at the bee-keepers' congress. We entered the hall while somebody was speaking; but as soon as he finished, our stalwart friend Muth rose up and made a motion that we have a recess of fifteen minutes, so that everybody would have a chance to shake hands and get acquainted with "Brother Root." Friend Muth always gives my name the long sound—that is, speaking the *oo* as it is in *boot*. Didn't they hurt my hand, though? I pretty soon felt afraid to see some of those good-natured, big, tall, Southern friends making their way toward me. Many and many times did I hear about the Home Papers, after getting a little acquainted. One man said that he had a neighbor who had been led to the Savior by those Home Papers, and this neighbor commissioned him to take especial pains to see me and tell me the debt he owed. Three or four days is altogether too short a time to take any sort of a view of

such an immense field for instruction as the Exposition, to say nothing of having time for friendly talks with such a multitude of friends who knew me perfectly well through my writings, but of whom I knew comparatively nothing. Since coming home, in getting hold of these letters from the friends, one after another, a feeling of sadness comes over me that I did not have an opportunity of having a longer talk, or of saying something, even if nothing more than "How do you do?" or "Good-by;" and the biggest part of the time, the latter was not said at all.

Dear friends, I do not know how I can well tell you much more of that great event of my life, my visit to New Orleans; but in our next number I want to take a little space to tell the juveniles something about the Mammoth Cave, which I visited on my way home.

MRS. HARRISON PAYS A WORD OF TRIBUTE TO A GOOD MAN.

OBITUARY NOTICE OF THE DEATH OF WM. WILLIAMSON.

ONE of the pleasantest anticipations, relative to the bee-keepers' congress, was that of meeting friends and acquaintances made at former gatherings of its kind. In corresponding with Dr. Brown, he informed me that Mr. and Mrs. Williamson would start for New Orleans Feb. 13, and remain there until after the bee-keepers' meeting. On arriving at the Windsor, my first inquiry was whether Mr. and Mrs. Williamson were stopping there, and I was informed that he had been called to a higher tribunal.

On arriving at Lexington, Ky., in the fall of 1881, to attend the National Convention, I was informed that I was expected to be a guest of Mr. Williamson's, at which place he lived, and that a place had been reserved for me. The Williamson brothers resided in a double dwelling; and one of the families being absent, both houses were appropriated for the use of guests, and a large number gathered around their hospitable board, and met together in their genial parlors. "It was good to be there;" and when the bus was filling with departing guests, and the driver called out "all aboard," some one would jump from it, and go through with another handshaking, as if reluctant to depart.

When the National Convention had adjourned, Mr. Williamson procured a conveyance and took a remaining party to visit Ashland, the home of Henry Clay, Kentucky's great statesman; from there to see the horse palace of General Withers, and its celebrated trotters. In the gloaming we gathered around the monument and grave of Henry Clay, and also cast a sad look on the little mound, erected over all that remains of the famous rider, John Morgan.

The pleasant hours spent with Mr. Williamson's family are emblazoned upon the tablet of memory never to be effaced. Now the home is in mourning, the wife a widow, and the children fatherless. On my own behalf, and of those who gathered there, I extend to them my sympathy in their great bereavement. May the God of the fatherless and of the widow sustain them in their affliction.

Peoria, Ill.

MRS. L. HARRISON.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

WHAT ARE THE NEW HONEY-BOARDS FOR?

YOU said in your report of the Mich. State Convention, that you had never before fully decided in your own mind what the honey-board was for. Will you or some correspondent please tell me what it is for in making comb honey, as I have not yet found out to my satisfaction?

A. S. VAIL.

Michigan City, Ind., Feb. 18, 1885.

Why, friend V., bless your heart, didn't I say the honey-board was for the express purpose of preventing the bees from waxing the sections and section-case fast to the frames, and for no other purpose that I could tell? The Hutchinson honey-board "strains out the drones;" but Heddon's is only that we may have things loose when we want to pick them up. It is a little queer, that neither friends Heddon nor Hutchinson told just why they *did* want a honey-board until after it had been talked about for some time.

SAD NEWS FROM OUR NEIGHBOR VIALLOU.

On my return home Saturday morning I found every thing working nicely; but at 11 o'clock at night I was awakened to see my factory on fire; and before any help could be given, the whole was blazing furiously, and the next morning there were but ashes and melted iron, etc., left. It is a total loss of over 3000 dollars, having no insurance—our insurance companies declining to insure saw-mills. I will rebuild at once, but it will be at least three weeks before I can fill orders, as I intend to build a frame building so as to be at work as soon as possible.

P. L. VIALLOU.

Bayou Goula, La., March 2, 1885.

Well, friend V., if you were unable to get insured, it is a rather sad affair, certainly. I presume you would, of course, have no trouble in effecting insurance if you had a brick building. Very likely another wooden building will be the thing for you to start up with this season, but I would assuredly start about it as soon as the rush is over, getting my machinery in some sort of a building that can be insured, and then I would have it insured, or stop business. Of course, one may do his own insuring when he has the means at hand to rebuild as fast as he burns down; and where the insurance companies charge excessive rates this might be the best thing to do, where one has this extra capital. As a rule, however, it is a pretty hard matter to start in business again without any insurance; or, at least, it greatly cripples one to be obliged to do so. In your warm climate it seems to me your building might be covered with sheet iron, which is not very expensive, and is almost fireproof. Of course, if you have very much bee-hive material stored in your factory, that of itself might ruin the building if it got afire. To avoid this, I would have a warehouse far enough away so that it might burn without endangering the factory, and then have a suitable track and car to run the stuff back and forth. That is the plan we adopt here.

If you are located close by the railroad, the whole thing can be managed without very much additional labor in handling. One thing is certain: Supply-dealers can not afford to burn up very many times without insurance.—As the above letter is dated March 2, we presume friend Viallou is ready to fill orders by this time as usual. I would hope that the friends, in making out their orders, will remember that the best way in the world to show one's sympathy for a suffering brother is to give him a little lift in the way of patronage and the like.

A REPORT IN REGARD TO FRIEND KALER'S CARP-POND, ETC.

Nearly five years ago I started into the bee-business with one colony of Italian bees which I obtained from Chas. Dadant & Sons, and in October last I put up 66 stands in chaff hives on summer stands. Last fall I built a fish-pond which is about 140 feet wide by 165 feet long, and an average depth of 6 feet. I bought 211 German carp of W. S. Kaler, Andersonville, Ind., and stocked my pond. I have seen Mr. K.'s pond, and it is a success without a doubt. I see no reason why every farmer can not have a pond and raise his own fish. J. W. SMITH.

Rock Lane, Ind., Feb. 16, 1885.

FEEDING BEES ON THE GOOD CANDY.

The method of using granulated honey on top of the frames, to feed bees, as suggested by friend Fradenburg, I believe, will not work well if the colony is small, or the quantity given at one time large, or the weather very cold, as bad results will certainly follow, and loss result. A better and perfectly safe way is to take a piece of burlap or old sacking, say a foot or ten inches square, and put one, two, or three pounds of the granulated honey on it, then fold over one part of it, covering the honey completely, and flatten it down, then place right over on the frames, then cover up snug and warm. The bees will take the more liquid part through the cloth, and then will cut through and remove the other, which greatly resembles a good article of brown sugar. This is an excellent way to feed for spring stimulating. Try it, friends.

FLANAGAN & ILLINKI.

Belleville, Ill., March 14, 1885.

Thanks, friends F. & I.; but while reading it, it occurs to me that Langstroth describes exactly the same food, and advises wrapping it in a cloth. See page 274, "Hive and Honey-Bee."

MY FIRST WINTER WITH BEES.

I have had a desire, from a boy, to work with bees, but never had a chance until last spring (1884), when I bought three colonies and one of your A B C books. The bees commenced the summer in good shape, but I got too anxious, and increased them to 9 by artificial swarming; and the summer being a very poor honey season I got no honey, and had to feed syrup for them to winter on. They wintered very well up to between the 15th and 20th of Feb., when the mercury ran down to 20 and 22 degrees below zero, and killed all my new swarms, leaving me the three I started with in the spring. My experience is rather discouraging, but I have learned that it is all-important to commence the winter with good strong colonies. I have bought 5 more

colonies, part Italians and part hybrids, all in good condition; have moved them home, and now have 8 strong colonies. If I get forgiveness for past mistakes I will try to manage my bees better in the future.

I quit the use of tobacco the 15th of last July, after using the weed for 3 years. I was riding in the smoking-car of a railway train near Cincinnati, and the resolution seemed to come to me all at once, and I took a plug of tobacco out of my pocket, and a cigar out of my mouth, and threw them out at the window, and have "stayed quit" ever since. Although having a natural appetite for tobacco, by the help of God I am and wish to remain a total abstainer. I prize your Home Papers very highly.

Winchester, Ohio.

T. L. REES.

Friend R., your resolutions, both in regard to bee culture and tobacco, have the right ring; and I tell you, when these good impulses come we want to recognize them as the voice of God, and heed them accordingly. When I can see a man take a plug of tobacco out of one pocket and a cigar out of the other, and resolutely throw them away, asking God to help him, then and there I begin to have faith in my fellow-men. May God bless and help and sustain you. If you go on in that way I know you will succeed, with bees or whatever else you set about.

EARLY QUEENS FROM CALIFORNIA.

I will introduce myself as a Maine man just arrived in this far distant bit of Uncle Sam's territory, and starting in bee culture. I have invested in about 100 stands, ranging from pure Italians to blacks. The season here promises to be dry—no rain since Jan. 1—and I have started nuclei preparatory to Italianizing, and I write to ask if you can use the superseded queens, as I note in your catalogue you supply such when obtainable. I can send them any time, as I now have queens laying that I have raised since coming here in November. If you can not use them, do you think it would be advisable to advertise them? I wish to sell them if possible, as a poor season means that every cent must count, to a new comer at least. I learned my "trade" of J. B. Mason, Mechanic Falls, Me., being there a part of two seasons. If I succeed in raising pure queens after a while, as is my object, do you think you would want a few early ones next season? Both black and white sage grow in my apiary in abundance, and we are picking strawberries, and have been for some time.

G. B. WOODBERRY.

Verdugo, Los Angeles Co., Cal., Mar. 9, 1885.

Friend W., we do not buy hybrid and black queens, because there is not enough money in them to pay the expense of two shipments. Those we offer for sale are such as are found in our own apiary, having a trace of black blood. Shipping queens from California to the States is too risky, and I would not advise it. I will tell you what you can do, however. Keep a good supply of all kinds of queens constantly on hand to supply the demand from your coast. No one has ever done that, that I am aware of, and it makes me feel bad to see orders coming to us from away across the Rocky Mountains. You can get them through, it is true; but it is poor policy all round to ship queens such long distances. We expect to get our early queens from Florida and the Southern

States. You see, this is nearer home, and they won't have to take a long cold trip across the Rockies.

SOUND DOCTRINE.

Tell B. F. Pasley (p. 170) to get down on his knees, if he needs a wife, and ask our Father in heaven to give him one, and God will get him a good one. No patent applied for. Ask in faith. "The Lord keep thee in all thy ways." D. MCKENZIE.

New Orleans, La., March 11, 1885.

Friend M., your doctrine is sound and orthodox. God gave Adam his wife, and it is fair to presume he will do the same for any of us; and may I take the liberty of adding, that when the wife comes she should be regarded as a gift from God, and treated accordingly?

PURIFYING WAX.

Will you please tell me how you purify wax for foundation? My own wax, made with a wax-extractor, is all right, clean enough; but I get some from my neighbors that is very dirty. I notice considerable talk in GLEANINGS about the Heddon hive and system. Let me say, the Heddon fixtures throughout are perfection, in my opinion. I have discarded ever thing else for them. It cost me considerable to make the change, but I am not sorry. Bro. Heddon deserves much credit for his inventions.

E. J. SCOTFIELD, 4C-100.

Hanover, Wis., March 10, 1885.

Friend S., there is no way that I know of to purify wax without considerable trouble and waste. We find a good deal of dirty wax that comes in all the wax of commerce. Melting in a deep can, and dipping off from the top, is about as good as any way. Blowing steam on the residue will liberate a further quantity of darker-colored wax. In making fdn., the dirty wax collects on the steam-pipes, and on the bottom of the tanks. We have sold this to wax-candle makers and refiners, to some extent, but they allow us but little more for it than the freight. The use of acids gives us a better-colored wax, but it is hard and somewhat brittle, therefore we have discarded the use of acids in cleansing wax for making fdn. Nice clean wax, such as comes from the wax-extractor, is really worth quite a little more than the wax of commerce. We usually pay about one or two cents extra for bright clean wax from the wax-extractor.

WINTERING BEES IN A CAVE, ETC.

I received my first number of GLEANINGS to-day, and am highly pleased with it. I was led to discontinue several other bee-journals, and subscribe for yours by the reading of your A B C, which I procured from a friend. I was captivated with Blue Eyes, and more especially with the outcroppings of your home life, which the pages of your book reveal. I find the same sentiment in the copy before me in "Notes by the Way," in reference to parting with your family.

Oh the blessings of a home where old and young mix kindly! The young unweaned, the old unchilled, in unreserved communion.

Who is this Huber? A successor of Blue Eyes, I suppose, which entitles him to papa's knee. Please tell your new subscribers something about him. I would ask only one trial, to guess after whom he was named.

My bees are in fine condition. I put 36 stands in a cave last fall, and every one wintered. I had them out for a fly last week. The ground being covered with snow, I scattered hay over quite a large space of ground, and, as a result, I lost scarcely any bees. It was quite warm, and what a jolly time they did have! I never saw bees fly stronger than they. I called for Sadie to come out and enjoy the sight with me. By the way, Sadie is my better half, and, in my opinion, one of the very best women in the Hawkeye State.

FEEDING BEES BY POURING THE FEED UPON THE BOTTOM-BOARD.

My bees will need some feeding before long. I tipped the hives back slightly when I carried them back in the cave, with the view of feeding at the entrance, in a way which I have never tried. I wish to know whether I can not pour a small dipper full of syrup along the entrance, letting it flow back over the bottom-board, say once each day for a while. I fed them one evening in this way, and they took it up clean, as I could see back by holding my lantern properly at the entrance. Having no feeders, this is convenient, if no detriment to the bees results from it. I have the caps on them well packed with dry slough hay. B. F. WOODCOCK.

Pleasantville, Ia., Mar. 12, 1885.

Friend W., I do not like to hear you say you stopped other bee-journals in order to take GLEANINGS. Will it not pay you to take all of them?—If I remember rightly, I have mentioned Huber a *few* times, even to new subscribers. He is a particular friend of mine. In fact, his mother says we are devoted to each other; or, in other words, that we mutually admire each other, and I rather think it is a credit to both of us that we do. But, about that cave. Ever since I visited Mammoth Cave (and, by the way, I have got a great big story in store for the little ones in regard to that Mammoth Cave), it has seemed to me that a sensible place to winter bees is in a cave—a dry cave, like most of the Mammoth Cave, where the temperature did not vary more than one or two degrees from a steady 55. I am glad you called your wife, and I am glad, too, you put the bees back and afterward fed them. Your plan of feeding is one of the very best, providing you do not feed so much that some of it is left on the bottom-boards in the morning for robber-bees to get into. If you allow any thing of that kind to happen, you may wish you never thought of feeding, or thought of bees either, for that matter. This plan of feeding is an old device; and where the bottom-boards are tight, or where one is careful not to let it drip or drizzle outside, it is as good a way as has ever been devised.

ROBBER-BEES GOING SIX MILES.

In early days, one of our old-time bee-keepers, who was a close observer of the outside of a gum, discovered that robbers were helping themselves to the honey of one of his hives. When he saw in what direction they flew, he was greatly surprised, for it was to a small grove a mile and a half away. It was his usual custom to hunt bees. He was sure he had them trapped; but by caging a few of the robbers, and letting them have their liberty near the grove he found they went over the grove to the yard of a friend six miles away. But in those days there was no bee forage until basswood came in

bloom. The bees would rear a large number of young, entirely exhaust their stores, and frequently starve. More instances than one can be referred to where bees will fly a long distance in a time when honey is scarce.

RAISING STRAWBERRIES BY THE BARREL.

In your issue of March first I noticed an article on raising strawberries in pots. There is another way where room is very limited. Take a sugar-barrel, and around it bore two-inch holes far enough apart to give the plants room in which to grow. Fill the barrel full of rich soil, and set your plants one in each hole. The whole outside of the barrel will be covered with red and green when the fruit is ripe. If the soil becomes dry, irrigate by pouring water in at the top, and keep the top covered over with something, that the soil may not be baked by the sun. A friend of mine has three barrels arranged in this manner, and he claims they will furnish all the berries they can use.

W. S. DORMAN.

Mechanicsville, Iowa, March 10, 1885.

Many thanks for the facts you give, friend D. Your plan of raising strawberries in a barrel has been going the rounds of the newspapers, but I should be much better pleased to hear from somebody who has made it a success. You say your friend claims that his three barrels will furnish all the berries they can use. Now, if he gets a good crop of berries by the plan, please write and tell us, will you? and also please tell us if he does *not* get a good crop. Suggestions like these, that are rather odd and curious, are always finding their way into the newspapers, and they are generally copied extensively; while reports of good results obtained in the old orthodox way are passed by with comparatively little notice. I for one am in doubt as to whether any strawberries were ever raised by the barrel process. We have been trying to raise strawberries in the greenhouse; but although we make the plants grow nicely, and get plenty of blossoms, and some very small green fruit, we have not seen a ripe berry yet.

BEES COMING OUT OF THE HIVES, AND DYING ON THE SNOW.

I should like to know how to keep the bees from coming out of the hive when the snow is on the ground. I have three colonies, and I am afraid when they keep coming out whenever the sun shines. I have tried every thing that I could think of, and I think I shall try bee-keeping two or three years more, and see if I can't do better than I did last year. I had three old swarms, and they swarmed ten times, and I hived them all, but they did not want to stay. They would leave the hive, and I would hive them again; but they would leave it again, and I kept only five young swarms, and now I have three. BEN BETTEN.

Goodles, Mich.

Friend B., from your description I should think that your bees were suffering for want of ventilation, or from disease of some kind. Healthy bees seldom come out and die on the snow, as you mention, although they do sometimes, it is true, come out when the sun shines full on the entrance, when they are impatient after a long confinement. At such times, putting a broad board in front of the

hive so as to shade it will often prove a remedy. If a few bees go out prematurely, and get lost, I would not mind it. More or less are lost all the while in this way, but we do not notice it very much unless the snow is on the ground, so as to make it look more apparent.

BEES AND CARP.

Our bees had a good cleansing flight to-day. One dead, and the other 25 appear to be in good condition. This is the first good flight for two months, and the weather has been pretty cold most of the time. Much of the honey in the hives last fall was thin and watery (it being collected late in the season), and I expected some loss, but am happily surprised at what I have seen to-day. The bees look bright, and the colonies appear to be strong. I am very much interested in the articles on German carp, which I read in GLEANINGS. I shall want one of your books on carp culture when it is ready. I have a pond of about 6 acres in extent that I stocked with carp 3 years ago last fall, but have not seen one of them since. There are a few other fish in the pond. B. DOWNS.

Naugatuck, Conn., March 4, 1885.

OUR 75-CENT TELEPHONES.

The telephone we got of you worked well to our bee-house, 600 feet away. Now our bees are gone, we have moved the wire to my brother-in-law's house, about as far again away, but we can only just distinguish a sound, but no words. That, of course, does not suit us. Have you one that will work well 1200 or 1300 feet? MRS. J. HILTON.

Los Alamos, Cal., Dec. 22, 1884.

I do not believe our little telephone will work well for more than 600 feet, my friend; and as we keep these principally to tell when bees are swarming, I do not believe it would be best for us to go into more expensive telephones. I am some in doubt whether you can get any *sound* telephone to work successfully for much more than the distance mentioned.

MAKING THE ROADSIDES BEAR HONEY-PLANTS.

It has often occurred to me, that scattering seed of honey-plants by the wayside is very wasteful as regards the seed, as a very large proportion will fail to get a hold, or ever amount to anything. Would it not be worth while to have an instrument (which might be useful in the garden also), something like a walking-stick, with one or more metal claws, to give the earth a little scrape, and break ground for the seed, which could be contained either in a hollow tube in the instrument, or a barrel at its end, operated on swivels by a wire attachment, and arranged to let loose a certain quantity at a time, to run into a guide-pipe conducting it to about an inch from the point of the instrument. It seems to me a much larger proportion of seed would take this way; and if we sow seed to beautify the landscape, we need not do it surreptitiously. I make the suggestion, so you can take it for what it is worth, as I think you are a very competent judge, and have every facility for experiment.

R. W. McDONNELL.

Galt, Ont., Can., March 10, 1885.

Friend M., your arrangement would answer very well for a certain class of seeds, no doubt; but for seeds as tenacious of life as clover, for instance, I think the better

way is to broadcast it just before a shower of rain. Seeds that will not readily make their way through grass and weeds had better be started as we do other crops; namely, plow and harrow your roadsides, and cultivate your plants until they get started. It is not very uncommon in our vicinity to see a good crop of potatoes raised along the roadside, and I for one like the idea of seeing cultivated plants take the place of useless weeds; and while you are about it, why not dispense with the fences, and put your cultivated honey-plants clear up to the wagon-tracks? I do not believe your instrument for stirring up the soil will do very much good while the ground is full of grass and weeds.

CROWDING OUR CHILDREN AT SCHOOL.

The crowding at school, spoken of by Mrs. Chad-dock, on page 53, is a great evil, and, I fear, a growing one; and it is not confined to examination day, nor to young children. Pride in the progress made by the pupils of the school has much to do with it. One of the celebrated normal schools of the State of New York belongs to this class. Its principal has been heard to say, that if the pupils came out alive that was all he cared, and he suits his actions to his words. One, at least, of the pupils of that school, died of overwork, before completing his course—murdered by that merciless system of crowding. And comparatively few, possessing energy and ambition, can complete a course at such a school without shortening life, and rendering it burdensome by means of an enfeebled constitution. I am thankful that this is not a necessary condition of a good education. If it were, I should rather my child should learn only "the three R's—Readin', 'Ritin', and 'Rithmetic.'" BURDETT HASSETT.

Howard Center, Iowa, Feb. 10, 1885.

SCORPIONS.

On p. 96 you evince a curiosity to know more about scorpions. From the references to them found in the Bible, as well as from writings of travelers and others, I judge that the scorpions of the Old World are much more venomous than those found in Florida and others of our Southern States. The sting is a short, bony, curved claw at the extremity of the tail, and is used by striking. Drumming on the table smartly with your bent forefinger will give a very good idea of the rapidity and manner in which they work their tail while stinging. The sensation caused by their sting is said to be similar to that caused by the thrust of a red-hot needle in the flesh, the pain lasting about a minute only, leaving no other effect after it, as do bee-stings. Old residents of that section dread them but little, simply being careful not to knowingly handle or sit down on them. The presence of one in the toe of a boot, while it is being pulled on in the morning, is pretty certain to give bystanders a chance to laugh tears. If you will send a small wide-mouthed bottle of alcohol to Friend Hart, I presume he will willingly return it to you with one or more of the little rascals in it. O. O. POPPLETON.

Williamstown, Iowa, Feb. 5, 1885.

Many thanks, friend P. I am very glad to know that scorpions, at least those with you, are no more dangerous than you put it. It would seem, then, that there is no poison exuded by the scorpion—perhaps only a poisonous substance incorporated in the claw.

REPORTS DISCOURAGING.

BAD REPORT FROM FRIEND MALONE.

BEES all dead, friend Root. You can make room for Blasted Hopes this spring. Out of 231 colonies last fall in our township there won't be 50 that will pull through the winter, though I must confess that the trouble is mostly carelessness. This winter beats the winter of 1880, bad. I have 8 colonies in a clump, and have lost 18 out of 30 on the summer stands.

Oakley, Iowa, Feb. 23, 1885. WM. MALONE.

ONLY 3 LEFT OUT OF 26.

I went into winter quarters with 26 good colonies; to-day I have three left, and about 300 combs, some Langstroth and American. This was the honey-dew, and nothing else. Those that had old honey from the year before are all right now. What plan shall I take to fill my boxes with bees? I have no spare money to do this, as I lost my property last June, and now I've lost about all my bees; and when summer comes the worms will be hard to keep out. Please tell me what is best for me to do, to make a start again.

F. SHILLING.

Jewett, Ohio., Feb. 28, 1885.

Friend S., you can fill your hives from the three you have left; but you would get along a little faster if you had a few more, and it may be best for you to purchase a few. Instructions for building up are given in the A B C book, and our back volumes contain many reports of those who have built up with wonderful rapidity from a very small number, after heavy losses in the winter.

ALL DEAD BUT ONE.

I took the frames out of the upper story, and filled them with rags, about four inches thick, and with planks around them except in front, which was to the south-east. I thought they were all right, but the winter took all but one. Two had no honey; two had honey in the outside frames, and two had some molasses, which I gave them in the fall, in the middle frames, and sealed honey in two of the outside frames. I have not heard from others lately, but some had lost several before I had lost all mine. I shall try again.

GETTING SPIDER-PLANT SEED TO SPROUT.

I divided the spider-plant seed with five who have frames, but not a single grain sprouted.

F. SIEFFER.

Campbellton, Mo., March 2, 1885.

Friend S., packing the bees up with rags, and fixing them up with planks and all sorts of protection, is only time wasted, when the amount of stores is insufficient, and I judge it was insufficient, or of poor quality, with the seven colonies that you lost. Don't use molasses, or any thing of the sort, for winter feed, but give them granulated sugar until they have sealed stores on both sides, behind and before, and overhead and under foot; and then when a blizzard comes and lasts for five or six weeks, they can not possibly miss their stores.—Your spider-plant seed will probably come up yet. It is a queer grower. It has acted very slow and sluggish in coming up in the greenhouse with us, but we have finally got a pretty good lot of plants by waiting some time for its slow motions.

A COMPLAINT THAT GLEANINGS COMES TOO OFTEN.

Last spring found me with 150 swarms of Italian hybrid bees in Langstroth hives, increasing during summer to 175 swarms, and about 700 lbs. surplus honey, mostly extracted, from one and two pound sections incomplete, or imperfectly filled. During the drought of summer they were fed liberally with sugar syrup, and by that means were made strong for work on fall flowers, and stored ample supply for winter, and a very small surplus; but, about 40% froze to death the last half of February, and many more are so weak that they will either die or are too much reduced to do more than build themselves up for another winter. The general failure of the honey crop all over the country, except it may be in one or two remote localities, followed as it is by unprecedented low prices, causes me to turn away from apiculture with disgust, and I do not care to be reminded of the business every 15 days by a new GLEANINGS. The whole thing is "gleanings" indeed, and of the leanest, thinnest kind. I don't want to think of it. Send the paper the remainder of the year (Aug. next) to ———.

Quincy, Ill., Mar. 4, 1885.

J. D. WALDO.

Friend W., I know your experience has been a little discouraging, but you have reported for only two seasons. Very likely your next season would place you away above board. But if you prefer not to try it any longer, it is all right, and we will send GLEANINGS to another address. But, my friend, before closing may I remind you that all kinds of business have their vicissitudes? Lines of industry like bees, dependent on the weather or other accidental circumstances, perhaps have more ups and downs than some others; but at the same time there is also a possibility of greater results. You rather make light of our plan of *gleaning*; but I suppose you know that these very gleanings, many of them, tell of single small apiaries yielding a larger income than large farms. Facts from actual experience are needed to bring out the truth of any science or industry; and this very letter of yours is an important factor in the general fund of knowledge. I am inclined to think we shall hear from you again, even if you do sell out. Sooner or later you will long for the "merry hum" once more.

One-half of the bees in this section are dead, and most of the rest more or less diseased.

Hudson, Mich., Mar. 12, 1885. J. C. DICKINSON.

HONEY-DEW FOR WINTER STORES.

About 90 per cent of the bees that went into winter with honey-dew, are dead, as far as I can learn (and about 75 per cent of the bees with white clover honey to winter on are alive). This is not very satisfactory, but it proves honey-dew to be poisonous as a winter food for bees. There are not bees enough left in this county for seed, which will make honey scarce next year.

C. J. CLARK.

Bowling Green, O., March 11, 1885.

OUTDOOR WINTERING VERSUS CELLAR WINTERING.

Bees have wintered very poorly here, more have died than in any winter for a long time. I think more than half the bees are dead in this neighborhood, and I feel safe in saying that the bees that have wintered outdoors with good protection are coming out better than those wintered in cellar or house. Some of our most experienced bee-raisers

are having the poorest luck, and I think it is the result of extracting honey from the brood-chamber during the honey season, and trying to supply nature with syrup.

SYLVESTER COOK.

Cox's Mills, Ind.

Friend C., extracting the stores from the brood-chamber, and leaving nothing, is certainly *very* bad policy; but if we take out the honey and give them sugar instead, before cold weather sets in, I think we are ahead of nature. Our methods should harmonize with nature, and with the wants of the bees. God has placed us here on this earth to improve on nature, or, if you choose, to assist and develop nature. Bees in hollow trees, where nature has full sway, do not by any means winter successfully.

A 16-YEAR-OLD BOY BEE-KEEPER, AND THE REASON WHY HIS HOPES ARE NOT BLASTED.

I am a boy only sixteen years of age, and so of course I do not know any thing about bees. I commenced last season with 2 colonies; increased to 4, and took about 5 lbs. of honey. I put them into winter quarters about Nov. 20, with lots of honey, and to-day I find but one alive. How is that for cellar wintering? But in spite of all this, we have got plenty of *price lists*, and *girls* too, in this part of Minnesota, so our neighborhood is not so cold as friend Smith's and Pasley's.

SETH WINQUIST.

Atwater, Minn., March 10, 1885.

I suppose, Seth, the reason why you are still cheerful is, that the plenty of price lists you mention tell you where bees can be bought cheaply, and those girls do their part by making *any* boy feel ashamed of himself if he attempts to put on a long face, or tries to look any thing like blasted hopes, with the world all before him. God bless the girls as well as the boys! There are battles before them to fight; but with the help of Him whose strong arm never fails, the end shall be victory.

50 SAVED OUT OF 70.

Many bees have perished during the winter. Out of 70 colonies I have about 50 left. Many that had 2, 5, or 10, report all dead, others pretty nearly all gone. Even some noted bee-keepers have lost heavily. I lost four in your chaff hives; had plenty honey; think they were smothered by snow. They had a good fly the other day; had dysentery badly. I had taken the pollen out, but I think it will be the last time I'll do so. Your reversible frame, I think, takes the lead for the present.

S. H. BOLTON.

Stanley, Ohio.

Friend B., you say four in chaff hives had plenty of honey. Now, this "plenty of honey" may have been honey-dew honey, may it not? If any one has had bees die in chaff hives, when fed up heavily on a syrup made of granulated sugar, and the feeding done during warm weather, I should like to hear the particulars. I do not believe that removing the pollen had any thing to do with your losses; that is, I do not believe it made them worse.

ONLY 6 LEFT OUT OF 24.

My report for winter of 1885 is this: Fall count, 20 colonies and four nuclei; spring count, 6 colonies. This is a little bad, but yet I am not discouraged; will try it again.

A. L. LINDLEY.

Jordan, Jay Co., Ind., March 14, 1885.

HEAVY LOSSES IN CANADA.

I am sorry to report that bees have not wintered well in this part of Canada (Ridgeway is situated on the line of the G. T. Railway, 18 miles from Niagara Falls, and 12 miles from Buffalo, N. Y.). I am unable, at present, to tell you just what the losses have been in other parts of the province; but I should not be surprised to learn that they have been severe. I have taken some trouble to "take stock" of this vicinity, and find the loss about 60 per cent. Dysentery is quite prevalent, although some have died from other causes. My yield this last season was about 86 lbs. of comb honey, spring count, principally from white clover. Basswood yielded sparingly, but we had a good flow from fall flowers.

J. F. DUNN.

Ridgeway, Ont., March 12, 1885.

ONLY 2 LEFT OUT OF 17.

My report for this spring is not very flattering. I have two swarms left out of 17. The honey was mostly eaten up in the brood-chamber, but plenty in other parts of the hive. They were all dry inside the hives, but I think the cause of their dying was that they ate all the honey in the cluster, and the weather was so cold that they could not get to other parts of the hive to get honey. The weather has been very cold here—36° below zero, and some days an average of from 16 to 15° below. Inclosed please find my order for a wax-extractor, for you can plainly see that I am in need of one.

E. W. OSBURN.

North Adams, Mich., March 13, 1885.

Friend O., we are glad to sell you a wax-extractor, but I would advise you to be not hasty in melting up your good combs. By and by you will get the mastery over this wintering trouble, and then your good combs will be needed. They will keep a lifetime, if properly cared for.

CHAFF-PACKED HIVES NO BETTER THAN COMMON ONES.

There is a great mortality among the bees in this locality this winter. Every one I have heard from has met with a partial, and many of them a total loss. The winter has been unusually severe on the little fellows, from some cause or other. I have lost 8 out of 17. I see no great difference between the chaff and common hives. Some, as strong stock as I have, I did nothing to in the fall; some in chaff are very weak, whilst all have honey. It will require care and attention to bring them through.

JOHN COULTER, SR.

Oxford, Ohio, March 16, 1885.

Do not be in haste, Friend C., to draw conclusions, especially with so small a number of bees. If your bees are put away as directed in the A B C book, I am inclined to think the losses will not be very heavy.

ALL DEAD IN CHAFF HIVES, BUT ALIVE IN SIMPLICITY.

Can you give me an idea of what is the matter with my bees? I have lost 10 colonies in chaff hives, while the bees in Simplicity hives, with a little chaff over them, are all right, and in as good shape as when put up in the fall. They have plenty of stores, but the honey is bad—nearly all honey-dew. Do you think the honey-dew killed them? I have made candy from granulated sugar, and fed those I have left. The chaff hives had cushions and loose chaff over them, and the full width of entrance left

open. Several bee-keepers here have lost their entire apiary in the last six weeks; others one-half. Outlook seems to show very few live bees for spring in this locality.

E. F. WILCOX.

La Grange, O., Feb. 19, 1885.

Friend W., I should say it was the honey-dew that killed them, without question; but I confess myself unable to give any explanation as to why the bees in Simplicity hives should have fared better. Were their stores exactly the same as the others'? We remember your locality as one where honey-dew was plentiful. I think stores of sugar syrup in place of the honey-dew would have saved them. See the report from your neighbor Dan White, in another column.

"Wherefore Hanun took David's servants, and shaved them, and cut off their garments in the midst hard by their buttocks, and sent them away."—I. CHRON. 19: 4.

That is just as we bee-keepers feel here in Harrison Co., this spring, for the bees come up missing. I will give you a report of 5 apiaries. Mr. Cavin, 60 in fall; spring, 0. Montear, 70 in fall; 2 left. Shilling, 28 in fall; 2 left. Hines, 50 in fall; half gone, last report. Self, 12 in fall; 4 yet.

So let the wide world wag as it will,
We'll bee gay and happy still.

Jewett, O., Mar. 23, 1885.

DAVID LUCAS.

REPORTS ENCOURAGING.

FROM 56 TO 76, AND 700 LBS. OF HONEY.

LAST year was my first year's experience with bees. The bees that I have got do not belong to me. I am working them on shares. Last spring I started with 56 colonies, which I increased to 74. I extracted about 700 lbs. of honey. We have very good indications of a good honey season this year. I saw drones in our apiary on the 2d inst. Bees were gathering pollen very rapidly on the 4th inst. We had some very hard weather here lately. The snow fell 3½ inches deep; on the 12th inst. the wind was from the north-east, consequently the snow blew in and blocked up the entrances, but I cleaned them out. Would it have hurt them to have left them alone until the snow melted, which it did in about 48 hours? My bees are in Simplicity hives.

F. S. ELDER.

Lake Village, Ark., Feb. 19, 1885.

Friend E., the snow around the entrance will do no harm, no matter how long it is left. The snow is so loose and porous, that the air always gets through in sufficient quantities. Disturbing or brushing the snow away may stir the bees up, and do harm. Don't meddle with the snow.

E. SANDFORD'S REPORT.

I went into winter quarters with 73 colonies—6 nuclei and 30 rather weak; all seem to have wintered very well, with the usual amount of dead bees in each colony. I wintered mostly on 10 frames, whether weak or strong. I use the 10-frame Simplicity hive; and in fixing for winter I took off the enameled cloth and put on a very thin muslin, and that so late that they could not wax or seal it before cold weather. I then filled the top story with corn silks, well pressed down, leaving the entrance 8x% open. The advantages this method of packing has over cushions are, there are no crevices, causing

too much direct ventilation, by which one of our most learned and scientific bee-men in this neighborhood has lost heavily this winter. So far this has been a hard winter on bees. I know of but two who have not lost heavily. This is my first report. Nokomis, Ill., Mar. 6, 1885.

E. SANDFORD.

FROM 25 TO 40, AND 2770 LBS. OF HONEY.

I must say a word for my bees. Last April, when I returned from Florida, I found them all alive but two colonies, 25 in all, generally in good condition. Bee-men in general complained of the season being very poor. As for myself, I have no reason to complain. I extracted 1740 lbs.; comb honey, 1030 lbs., which makes 111 lbs. and a fraction to the colony, spring count. From one-half to two-thirds of my honey the past season was made from red clover; the rest from white clover, our only source of honey in this part of the State. I have increased the past season to 40 colonies, all strong, and full of honey at this writing.

J. F. MILLER.

Millersburg, Ky., Feb. 23, 1885.

MY REPORT FOR 1881.

We commenced the season with 6 colonies, and increased to 18; sold 4 of them for \$50.00 before we extracted any, and from the 14 that were left we extracted a little over 1200 lbs., so we have now 14 to commence with this year. How do you think this will do for a beginner?

MRS. P. H. HALL.

Luling, Texas, March 16, 1885.

Tiptop, my friend.

ONLY ONE LOST OUT OF 81.

I have lost only one colony out of eighty. My bees are in the best condition I ever had them at this time of the season.

MAD TALBERT.

Morristown, Ind., Mar. 9, 1885.

ONLY TWO LOST OUT OF 75.

Bees in this section are faring rather hard this winter. I have lost only 2 out of 75, up to date, but I hear that many around here have lost heavily, while others have lost all.

N. CASE.

Orangeville, O., March 9, 1885.

A GOOD REPORT FROM MISSOURI.

To-day I examined four swarms of my bees to get them to rearing drones; some are rearing brood, and one had sealed brood. I never saw bees in finer condition, nor stronger, so early in the spring. I have 35 colonies, all are alive, and took a good fly to-day. Bees are packed in chaff, and no dead colonies. I shall run 100 nuclei for queens this summer, and more if needed.

G. A. BEECH.

Quiltman, Mo., Feb. 27, 1885.

NOTES AND QUERIES.

A QUESTION FOR FRIEND DOOLITTLE.

IN GLEANINGS, Feb., 1885, Mr. G. M. Doolittle, in his article on comb honey, says he puts 5 or 6 frames of empty comb for a new swarm. What does he do with the remainder of the space?

Does he put in the remainder of the frames empty, or does he put in division-boards? An answer would greatly oblige. I consider Feb. 1st No. of GLEANINGS worth the price for a whole year. Set me down as a life subscriber.

E. W. JAMES.

Summit Grove, Ind., March 9, 1885.

[Thank you, friend J. I presume friend D. meant to use a division-board; but if the colony were large enough, and needed more room, I think he would put in more empty combs. Will he please answer?]

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,
EDITOR AND PUBLISHER.
MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, APR. 1, 1885.

He that taketh not his cross, and followeth after me, is not worthy of me. — MATT. 10. 38.

VIALLO'S NEW FACTORY ALREADY STARTED.

The following is at hand just as we go to press: My new factory is just completed, and I have steamed up this morning, and I am again in running order, except for sections. V. L. VIALLO.

Bayou Goula, La., March 23, 1885.

That is what I call business, friend V. Such energy deserves encouragement, does it not, boys?

C. R. ISHAM, Peoria, N. Y., sends us samples of some very nice wooden separators, about 1-16 inch thick. These separators, he states, are cut from well-seasoned lumber, and will therefore keep straight. The prices of these separators are 50 cts. per 100, or \$4.00 per 1000.

STINGLESS BEES.

THE newspapers get hold of these about once in so often, for a sensation, and then the item goes the rounds. These bees do not amount to any thing. They have been carefully tested; and although it is true, they do not sting, it is also true that they do not gather any honey of any account. There is no rose without its thorn.

MAIL, EXPRESS, OR FREIGHT.

WHEN making an addition to an order you have previously made, or when referring to something you have had or ordered, please state whether by mail, express, or freight, for a separate set of clerks are employed on each department, and much time will be saved by saying how you ordered the goods sent.

OUR OWN APIARY.

We are happy to say that our apiarist, Mr. Wm. Kimber, has gone thus far with his 198 colonies, with the loss of only 7. With reasonably fair weather, the probability is we shall not lose any more. The evidence is heavily in favor of stores of granulated sugar. Neighbor H. has lost nearly half of his River apiary, and we think it was owing almost entirely to the stores of honey-dew honey.

A JOURNAL ON CARP CULTURE.

A NEAT little sheet comes to us from the neighboring town of Akron, O., entitled, *National Journal of Carp Culture*. There is a real want for a journal on carp culture, and we gladly welcome the new comer among our rural class journals. The abundance of beautiful springs in the vicinity of Akron would, we should suppose, give wonderful facilities for making carp-ponds, especially in keeping the water at a uniform level the year round; for these soft-water springs of Summit County are, as a rule, never-failing. I presume the editor has, of course, a pond or ponds of his own, in order that he may give us the benefit of his practical experience in the new industry, but I do not find any mention of it in this first number.

BUDDING AND PRUNING KNIVES.

We have just added to our counter store, knives for the above purpose, made by the celebrated Northfield Knife Co., expressly for us. We have three pruners and one budding-knife. The heaviest pruner, which has a metal plate on the lower end, and is heavy enough to drive a pretty good-sized nail, is 75 cts. The next size to this above is 35, and the smallest 25 cts. Budding-knife, 25 cts. If wanted by mail, the postage on the above knives will be 6, 5, 3, and 5 cts. respectively. My name is put on the blade of each knife, and I do not hesitate to guarantee them equal to any thing made, as to steel and temper. We are enabled to give the above low prices because we buy them in large quantities.

BUSINESS AT THE PRESENT DATE.

I AM glad to be able to say, that although we have been a little behind, we have now caught up on every thing, unless it is a few orders for odd-sized sections, which have been delayed on account of the difficulty in getting lumber sufficiently seasoned fast enough. As we have now fine weather, by the time this reaches you we hope to have every order clear up. Well, as we are so much abreast of the season, we extend the discounts on foundation-mills, sections, and comb fdn., 10 per cent from list prices, until our next issue. Beeswax is still low, compared with former seasons, probably, somewhat, on account of the loss of so many bees. May be we shall be enabled to carry the above discounts through the entire season. We will if we can; but demand and supply must regulate the matter.

THE NEW WEEKLY "CANADIAN BEE-JOURNAL."

WE have long expected that friend Jones would be obliged to publish a bee-journal, sooner or later, but we did not quite expect it would start out to be a weekly bee-journal at the outset. So it is, however. We have the following from friend Jones to-day:

We suppose that you have, of course, heard that we are going to have a CANADIAN BEE-JOURNAL. Canadian bee-keepers have been at us incessantly to start one, for many years past, and we have at last decided to try it. It will consist of some number of pages as yours, and at same price. There will be half the number of pages in each number, but it will be issued weekly instead of every two weeks. We want to work in unison with all our brother-publishers. We know that we can with you. We intend publishing first issue about the first of April. B. A. JONES & Co.

In friend Jones's prospectus we find the following sensible remarks:

Though it may ultimately prove a source of fair recompense for the amount of labor expended, it will be some years before it does so, and you all know that it is not a pleasant prospect to look forward to that of working for years for nothing. We do not enter the field expecting to "make money," but for the sole purpose of *WARMING* the proud position which apiculture has attained in the Dominion of Canada, and for the purpose of the better advancing the allied interests of all engaged in the business.

THE A B C OF POTATO CULTURE.

THIS is to be a book of 50 or 60 pages, size and style of the A B C book. It is written by Mr. T. B. Terry, the successful farmer and potato-grower of the State of Ohio. Mr. Terry is employed most of his winters in giving lectures before farmers' institutes, and he is always authority on any thing connected with agriculture. The book is not only a valuable one to potato-growers, but a great part of it applies to the management of almost any crop on the farm, especially to the preparation of the soil, manures, etc. Mr. Terry reminds me a good deal of friend Hutchinson's early writings. He is emphatically opposed to farmers investing largely in commercial fertilizers, new-fangled seeds, and, to a

considerable extent, in new-fangled machinery. His advice is, to make your own fertilizers on the farm. Take good care of that which you have already; make two blades of grass grow (or two potatoes, if you choose) where one grew before. Make the most of what you have got; and when you get a little money ahead, then try the novelties cautiously, if you have a mind to. Price of the book, 35 cts.; by mail, 40 cts. We expect to have it ready to mail by May 1.

ORDERING HEAVY MERCHANDISE BY EXPRESS.

TROUBLES have already commenced in this direction. Almost every day one or more of the friends order 500 or 1000 section boxes by express. Well, unless the order goes to the South, and in the majority of cases it does not, we know before the goods are started that the express charges will be a great deal more than the goods are worth—sometimes more than double. What shall we do—write and explain before shipping, and take the risk of being told that the one who ordered knew his own business, and would thank us to ship as directed, or shall we obey orders, and then have the sender refuse to take the goods because the charges are so much more than he expected, leaving us to pay the enormous sum ourselves? We have tried all sorts of ways, but none of them always meet with approval. If when you want something by express that is very heavy, and on account of particular circumstances are willing to pay charges a good deal more than the thing is worth, if you will so state it will make our duty plain and easy. For instance, suppose you say, in ordering 500 sections by express, "I know the charges on these goods will be fearful, but I want them for a particular purpose, and am willing to stand it." You see, we do not know whether you are posted in ordering goods, and know just what you are about, or whether you said express charges without thinking or knowing that such bulky goods are *never* sent by express unless some special contingency demands that they should be on hand instantly, without regard to cost.

REVERSIBLE FRAMES, AGAIN.

It pains me to see so many working on this matter, and taking the trouble to send me models not only of what has already been done, but working on something that has been ruled out by universal consent. For instance, a great part of the whole number are for using frames at fixed distances from each other, whereas the majority of bee-keepers have decided that fixed distances can not be tolerated. Another class have an arm, of wire or metal attached to each of the four corners of the frame. I believe this has been decided by universal consent to be too much machinery. Another class hitch the arrangement to the top-bar, which is simply nailed in the end of the end-bar. If you use a reversing device, it needs to be attached to the *end-bar*, for obvious reasons. Still others send us something that will mash the bees, or cut them in two across the rabbet. I should rule out all these. Another large class propose having a supporting-arm half way down the frame, and the rabbet or strip of metal fixed half way down the end of the hive to hold it. This is old and discarded, but it comes up in new forms several times a day. Our friends of the *B. B. J.* come the nearest to making this practicable by making the bottom story of the hive half depth. Frames can be handled very well in such a hive;

but the cap, or top-story, must slip down over the upper half of the frames. Now, when the bees build fins of comb from the upper part of the frames to this cap, or half-story, what are you going to do when you want to take off said cap? Heddon's arrangement, and the one we are making, seem to me to be the only practical devices yet submitted, although the number sent in is hundreds. One thing more: Whatever device is adopted should permit us to use both frames and hives already in use, and should be so it can be attached to the frame without nails or screws, or boring more than one hole at each end-bar. This would rule out friend Heddon's arrangement, but our own would fill the bill.

We have to-day, March 30, 6234 subscribers.

CONVENTION NOTICES.

The bee-keepers' association of North-Western Indiana will meet on Wednesday, the 8th day of April, 1885, at 10 o'clock A. M., and 2 o'clock P. M., in the jury-room at the Court-house, in Laporte, Ind.

A. FAHNSTOCK, SEC.

On account of the prevalence of smallpox in the city of St. Joseph, Mo., the semi-annual meeting of the Western Bee-Keepers' Association will be held at the Court-house in Independence, Mo., April 23 and 24, 1885.

C. M. CRANDALL, SEC.

The Elbert Co. bee-keepers will hold their next meeting in the Grange Hall, at Bowman, Ga., April 4, 1885. All interested are invited to attend and make the meeting as interesting as possible.

W. R. HENDRICKS, Pres. J. A. DILLASHAW, Sec.

The Linwood Bee-Keepers' Association will be held at Rock Elm Center, Wis., in Condit's Hall, May 4, 1885, at 10 A. M. All interested are cordially invited to attend, and make the meeting a profitable one. Prominent bee-keepers are expected.

B. J. THOMPSON, SEC.

The second annual meeting of the Western New York and Northern Pa. Bee-Keepers' Association will be held at Cuba, N. Y., Tuesday, May 4, 1885. A very large attendance is anticipated, as many prominent bee-keepers are located in this territory, and are members of the organization.

W. A. SHEWMAN, Sec'y.

* SNAKED + SECTIONS. *

ONE-PIECE, V-GROOVE.

FIRST CLASS IN EVERY RESPECT.

They took first premium at Michigan State Fair last September. Every apiarist who uses them once wants no other. Will send two samples by mail for 4 cts. postage, or 1000, 44, for \$4.00. Regular price is \$1.50; per 5000, \$21; per 10,000, \$40. Send for circular, etc. Address

BERLIN FRUIT-BOX CO.,

6-84 Berlin Heights, Erie Co., O.

PLEASANT-VALLEY APIARY.

ALBINO AND GOLDEN ITALIAN QUEENS.

Untested, after June 1 to October.....	\$1 00
Per one-half dozen.....	5 00
Tested, Each.....	2 00
Select Tested, large and Light-colored.....	3 00
Full Colonies in Langstroth or Simplicity hives.....	8 00
Nucleus Colonies no queen, two-frame.....	2 25
" " " " Three-frame.....	3 00

Safe arrival guaranteed, and all orders filled on short notice, or money returned. Golden Italian Queens, reared in my home yard of over 70 full colonies (all pure), and the Albinos in my distant Apiary. Our winters are long and severe; my strains have stood the *test of hardiness*, as I have always wintered on summer stands, and have not lost a single colony in the past 4 years. Sample of my large light-colored workers sent for 10 cts.

Address E. L. WESTCOTT,
FAIR HAVEN, RUTLAND CO., VT.

BEESWAX.

Made into Given foundation on shares or for cash, on favorable terms. Best machinery, experienced hands. Western bee-keepers, please take notice: save freight or delay, and secure an article as good as any for all purposes.

JOHN BIRD,
Bradford, Chickasaw Co., Iowa.

J. W. K. SHAW & CO.,
LOREAUVILLE, - IBERIA PARISH, - LA.

We are at this date (March 16) sending out tested queens. By the 1st of April will be able to supply all demands for untested by return mail, from our choicest strains. Tested, \$1.50, \$2.00, and \$3.00. Untested, \$1.00. Special rates to dealers on $\frac{1}{2}$ doz. and dozen orders.

OLD TYPE FOR SALE.

We have still on hand 76 lbs. of our old nonpareil type for sale. For a sample of it, see any number of GLEANINGS previous to May 15, 1884. Also 17 lbs. of Italic, if desired. As it is all packed, we can not divide either lot. The Roman includes 5 lbs. and over of "logotypes," that is, the words *the*, *and*, *that*, *ing*, *tion*, etc., are made all on one body, thus facilitating composition. We offer the lot at 20 cts. per lb.

A. I. ROOT, Medina, Ohio.

WANTED, STUDENTS, Ladies or gentlemen, to learn PRACTICAL RAILROAD and COMMERCIAL TELEGRAPHY. Line and instruments furnished free. Board reasonable. Address

MR. and MRS. A. R. UNDERHILL,
La Grange, Lorain Co., Ohio.

BEES

I expect to be able to furnish 1, 2, and 3 frame nuclei the last of May, and first of June. Send for prices. DAN WHITE,
New London, O.

REVERSIBLE FRAME HIVES, REVERSIBLE Frames, that will fit any Langstroth hive. Sample by mail, 15c. One set, 8 frames, by mail, 80c. By express, 40c; \$4 per hundred. Also white poplar and bass-wood sections. Send for circular.

O. J. HETHERINGTON & CO.,
East Saginaw, Mich.

ITALIAN BEES & QUEENS.

As usual I will have bees to sell by the colony or nucleus at reasonable prices. None by the pound until about June 1. E. A. GASTMAN, DECATUR, ILL. 7d

1879. ITALIAN QUEENS. 1885.

For Italian queens in their purity, and that can not be excelled; Comb Foundation and supplies generally, send for circular. T. S. HALL,
Kirby's Creek, Jackson Co., Ala.

ONE-PIECE SECTIONS A SPECIALTY.

We make five styles and all sizes, and keep other supplies. Sample hundred, 50 cts. Sample and circular free. Orders filled promptly.

B. WALKER & CO., CAPAS, ST. CLAIR CO., MICH.

We are out of Jan. and Feb. numbers of 1882, of which we would like a few copies, and will pay 10c each for them.

A. I. ROOT, Medina, O.

Simply Send me Your Name

and address, plainly written on a postal card, and I will send in return my circular and price list of Italian and Holy-Land Bees and Queens, free.

J. C. MISHLER, LIGONIER, NOBLE CO., IND.

WHO WANTS IT IN APRIL?

1 to 5000 lbs. Brood (85% wax) or smaller, Comb Foundation, strictly pure wax, made on Root's mill, 50c per lb.; thin, 50c.

MODEL BEE-HIVE CO.,

Cor. 52d & Jefferson Sts., Phila., Pa.

Bee-Hives, FOUNDATION, SECTIONS, &C.

With a Capacity of 7000 Square Feet of Floor.

We claim the best facilities for furnishing supplies in the South-east. OUR NEW FACTORY is equipped with the best and latest improved machinery, which enables us to furnish our goods up to the times, and will furnish ALL KINDS AT VERY REASONABLE PRICES. Parties needing supplies would do well to see our price list before buying.

QUEENS and BEES for 1885.

It should be remembered that we are HEADQUARTERS FOR THE ALBINOES, and make a specialty of this variety. We also breed from select Italians. Send for circular and price list.

S. VALENTINE & SON,
HAGERSTOWN, MD.



I ARISE to say, to the readers of GLEANINGS, that during the coming season, Doolittle will rear queens from his best Italian stock at the following prices:

Untested queens, each \$1.00
" per doz. 10.20
Untested queens reared by natural swarming, each 1.50
" per doz. \$15.00
Tested queens, each... 2.00
" by natural swarming, each... 3.00
Tested queens, 1884 raising, sent in May, each 5.00
Extra selected, two yrs old, each... 10.00

If any further information is desired, send for circular. Address

G. M. DOOLITTLE,
Borodino, Onondaga Co., N. Y.

SAFE INTRODUCTION OF QUEENS GUARANTEED

By using Dyke's Safe Introducing and Shipping Cage. This cage was well tested last year all over the U. S. and Canada, and only one report of failure was received of all the queens sent out.

Prices (safe arrival and introduction guaranteed.)
In May, In June, After June.
Untested Italian Queen... \$1.05 \$1.38 \$1.10
Tested " " 3.30 2.55 2.20
Warranted " " 2.20 1.93 1.65

Or we will send queens in the safe cage with full directions, safe arrival only guaranteed for prices as per Root's queen price list. Best Imported Stock. NO FOUL BROOD IN THIS SECTION. We refer to 1st City Bank of Pomeroy. Catalogue giving full particulars and prices, free. Send for it.

S. A. DYKE & CO., POMEROY, MEIGS CO., OHIO.

WAR-HEEL-APARIES.

(No. Co. Queens.) ABBOT L. SWINSON, (No. Co. Queens.)
" Carniolans. Proprietor. " Cyprians.
" Goldbees.) Goldbees, Wayne Co., N. C.) Syrians.

PRICE OF LAYING ITALIANS
Untested queens, each... \$1.00 \$1.10 \$1.00
" doz... 6.00 5.00 5.00
Best tested queens, each... 3.00 2.50 2.00
" doz... 15.00 12.00 11.00

The other races, one-fourth more. For nuclei, add 75 cts. for each L. frame of bees and brood to price of queen. Pure wax foundation, 50 cts. per lb.; 50 lbs. and over, 48 cts.

THE SUCCESS FOUNDATION-FASTENER

is a recent invention that will be appreciated by all practical apiarists. "Nothing better can be desired."—H. Doolittle, Milan, Ill. "A great way ahead of the Parker machine."—G. M. Doolittle, Borodino, N. Y. "It takes the cake; the fastening is a complete job, as I never saw it before."—Chas. F. Muth, Cincinnati, O. Correspondence with supply dealers solicited. Circulars free. Price of fastener for 1-lb. sections, \$1.00; for from $\frac{1}{4}$ lb. to 2 lb. sections, \$1.25.

GIWITS & SON, WEST JERSEY, ILL. 7d

IMPORTED QUEENS.

In April, 11 francs in gold.
May and June, 10 " " "
July and August, 9 " " "
September and October, 7 " " "

No order received for less than 8 queens. Queens which die in transit will be replaced only if sent back in a letter. **CHARLES BIANCONCINI & CO.,**
3-13d Bologna, Italy.

Italian Queens & Bees For Sale.

Full colonies in Simplicity hive, L. frame, May, \$10.00; June, \$8.00.

Italian queens from Imported stock. Untested, in June and after, \$1.00; tested, \$2.50.

I send out none but good bees and queens, such as I am willing to keep in my own apiary. I have been in the business eight years, and am yet to have the first dissatisfied customer. Barnes circular saws, new and second-hand.

D. S. BASSETT,

7-12db FARMINGVILLE, WORCESTER CO., MASS.

BEECH'S QUEENS

Warranted Italian queens, from Imported mother. May 1st, \$1.00; \$1.00 per doz. Choice select tested queens, \$3.50. I guarantee safe arrival and satisfaction.

7-12db Beech, Guilford, Nodden & Co., Mo.

RAPE SEED, 15¢ PER LB.; 10 LBS. \$1.00. **SPIDER-PLANT SEED,** \$2.00 per lb. Snap-
shots Plants, \$5.00 per thousand. Must include 15¢ per lb. for postage. **ANDREW GURNEY,**
7-19db College Hill, Poughkeepsie, N. Y.

APIARIAN SUPPLIES. ITALIAN BEES, QUEENS AND HONEY. INDUSTRIAL SUMMER AND WINTER HIVE. Combination Family Crate, Honey-Board, and Section Rack. Circular free. **J. W. CLARK,** Clarksburg, Madison Co., Md.

IT IS A SUCCESS.

Rabbits in the apiary will keep the grass and weeds down better than a lawn-mower. Circular free.

7-12db **A. A. FRADENBURG,**
Port Washington, O.

SECTIONS.

I am selling those beautiful ALL IN ONE PIECE BEE-LIN SECTIONS at \$1.50 per thousand, shipped from our factory, which will be a great saving in freight to all west of Detroit. Send for free circular, and get prices for hives in flat, and made up. Frames, Foundation, Smokers, and all useful appliances for the apiary.

7-16db **M. H. HUNT,**
Bell Branch, Wayne Co., Mich.

PLYMOUTH ROCK. Will send setting of 13 choice Plymouth-Rock eggs for \$1.00, carefully packed.
7-16db **E. F. WILCOX,** La Grange, Ohio.

APPLE-TREES, ASPARAGUS ROOTS, AND HARDY CATALPA-TREES.

to exchange for Italian and Syrian Queens and Bees, or for sale. If you wish to exchange, write me at once what you have. **A. J. NORRIS,**
7-8-9d Cedar Falls, Black Hawk Co., Iowa.

Oldest Bee Paper in America—Established in 1861.

AMERICAN BEE JOURNAL,

WEEKLY, at \$2.00 a year.

MONTHLY EDITION, 16 pages, 50c. a year.

925 West Madison Street, Chicago, Ill.

HEADQUARTERS IN THE SOUTH

FOR THE MANUFACTURE AND SALE OF

BEE-KEEPERS' SUPPLIES

The Only Steam Factory Erected in the South, Exclusively for the Manufacture of Hives, Frames, Sections, Etc.

Viallon, and Root Simplicity Hives, Comb Foundation, Extractors, Smokers, etc. Italian Queens and early four-frame nuclei a specialty. Full colonies in any quantity. For more particulars, and prices, send for my Descriptive Illustrated Catalogue. Also see ad. in February 1 number.

Cash market price for wax.

5tf

P. L. VIALLON,

Bayou Goula, Iberville Parish, La.

PURE ITALIAN BEES

Full Colonies, Nuclei, and Queens a specialty. If you intend buying bees or queens this season, send for my circular and price list. You will save money by so doing.

C. C. VAUGHN, Columbia, Tenn.

NOW READY! NOW READY!!

500 U. S. STANDARD HONEY-EXTRACTORS,

1000 TOLEDO SMOKERS,

Both of which took the first premium at Ohio, Indiana and Michigan Tri-State Fair in Sept., 1884. We also manufacture and deal in a full line of Apian supplies. Send address for circular.

3-9d

E. T. LEWIS & CO., Toledo, Lucas Co., O.

1885 ITALIAN QUEENS. 1885

6 WARRANTED QUEENS FOR \$5.00.

Write for Circular.

188d

J. T. WILSON,
NICHOLASVILLE, KY.

FLAT - BOTTOM COMB FOUNDATION.

High side-walls, 4 to 14 square feet to the pound. Circular and samples free.

J. VAN DEUSEN & SONS.
41d Sub-Manufacturers,
SPROUT BROOK, MONT. CO., N. Y.

BEE-KEEPERS' SUPPLIES

MANUFACTURERS OF

ONE-PIECE SECTIONS,

Made from Basswood.

HIVES OF ALL KINDS,

FOUNDATION, SMOKERS, ETC.

Send for Price List to

23-14

Smith & Goodell, ^{Superior} **Derr & Harris.**
ROCK FALLS, WHITESIDE CO., ILL.

W. Z. HUTCHINSON,

ROGERSVILLE, GENESEE CO., MICH.,

Can furnish just as neat, white, smooth, and perfect dovetailed white-poplar sections as there are made. Send for sample and prices.

3tf

For Sale!

Dark leather-colored or light Italian bees and queens. Manufacturer of comb foundation. Cash for Beeswax. Send for Price List, free.

E. PETERMAN,
5-7-9-11 E 15d Waldo, Sheboygan Co., Wis.

ITALIAN BEES.

Dollar Queens and Nucleus Swarms specialties, from June 1, to Oct. 1. 500 customers say my strain of Italians surpass every thing. Foundation from clean yellow wax furnished as low as it can be made. Send for Circular to 5-7-9-11-13-15d

W. H. PROCTOR, Fairhaven, Vt.

BEE-KEEPERS' SUPPLIES, BEE-BOOKS, & LE CONTE PEAR-TREES FOR SALE.

One pear-tree sent postpaid for 40 cents.

24fd T. A. GUNN, Tallahoma, Tenn.

TESTED QUEENS, \$2.00. Untested, \$1.00. 4-frame nuclei, \$3.50 and \$4.50. Mississippi wax-extractor, \$3.00. OSCAR F. BLEDSOE, Grenada, Miss. 3td

HEADQUARTERS IN THE WEST FOR

ITALIAN and CYPRIAN QUEENS.

Tested Cyprian queens from imported mother (Jones's importation), in April, \$5.00; in May, \$4.00; in June and after, \$3.00. Warranted Cyprian queens, in May, \$2.00; in June and after, \$1.50. Italian queens from imported mother (Root's importation), after May 15th, \$1.00. I have had experience in breeding queens, and guarantee satisfaction. Order now, and pay when you want queens.

Address W. McKAY DOUGAN, M. D.,
54fd Seneca, Newton Co., Mo.

One-Piece SECTIONS, Dovetailed; HIVES OF DIFFERENT VARIETIES:

FRAMES, SHIPPING - CRATES, WIRE
NAILS, ETC.

Send for circular and price list before purchasing.

MILLER BROS & CO.,
5-5-9d Dryden, Mich.

JOB LOT OF WIRE CLOTH AT GREATLY REDUCED PRICES.

Such a brisk demand has sprung up for this, and our customers seem to be so much pleased with the goods, we have succeeded in getting another still larger lot, of one of the largest manufacturers of wire cloth in the world. Please bear in mind that the only way in which we can afford to sell it at the very low price of 1½ cts. per sq. ft. is by selling the entire remnant just as it is put up. We have now in stock the following pieces. As fast as it is sold, each piece is crossed out, and the next issue will show what remains.

Width, 8 inches. 3 rolls containing respectively 50, 50, and 60 square feet.
Width, 10 inches. 1 roll, containing respectively 72, 70, 65, and 75 square feet.
Width, 11 inches. One roll, containing 80 square feet.
Width, 12 inches. 2 rolls, containing respectively 90 and 100 square feet.
Width, 16 inches. 1 roll containing 130 square feet.
Width, 19 inches. 1 roll, containing 150 square feet.
Width, 22 inches. 2 rolls, containing respectively 250, and 180 square feet.
Width, 26 inches. 5 rolls, containing respectively, 215, 210, 216, 215, and 216 square feet.
Width, 28 inches. 1 roll, containing 234 square feet.
Width, 28 inches. 4 rolls, containing respectively, 316, 300, 290, and 316 square feet.
Width, 16 inches. 3 rolls, containing respectively, 320 and 166 square feet.
Width, 42 inches. One roll, containing 245 square feet.

A. I. ROOT, MEDINA, OHIO.

Bee-Hives and Supplies.

We have remodeled our machinery, and can fill orders on short notice. If wanted, odd sizes made. Send orders now before the rush comes. We have a large stock on hand now. We give 3 per cent discount till Feb. 1. Price list free.

B. J. MILLER & CO.,
2-12d Nappanee, Elkhart Co., Ind.

Early and Good! ITALIAN QUEENS & NUCLEI.

TESTED AND UNTESTED QUEENS, RAISED ONLY FROM THE BEST IMPORTED
Untested Queens, April and May \$1 25

" " June and after 1 60

Tested queens, April and May 3 60

" " June and after 2 50

Dozen rates on application.

3-frame nuclei, with lots of bees, June and after 3 00

Safe arrival guaranteed. Order early.

W. J. ELLISON,
5-7d Stateburg, Sumter Co., S. C.

FRUIT, SHADE, AND HONEY.

Bee-keepers, please see my advertisement in GLEANINGS for Nov. 15, 1884, page 760, and order at once. Two dozen for \$1.00, postpaid. Address 44fd JNO. W. MARTIN, GREENWOOD DEPOT. VA.

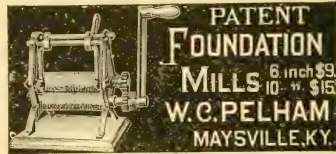
BEE-HIVES, ONE-PIECE SECTIONS, COMB FOUNDATION,

—AND—
Bee - Keepers' Supplies Generally.
Price List Sent Free.

J. J. HURLBERT,
1-11 1mo Lyndon, Whiteside Co., Ill.

Colonies, Nuclei, and Queens, FOR SALE.

For terms, address 4-5-7-9d
S. D. McLEAN, COLUMBIA. MAURY CO., TENNESSEE.



Basswood-Trees.

Basswood-trees 1 to 3 feet high, - - - \$1.50 per 100
Hard-maple trees, 3 to 5 feet high, - - - 1.50 per 100
Mountain-ash, ornamental, 3 to 5 feet, 10 cts. apiece.
Address HENRY WORTH,

11fd Borodino, Onondaga Co., N. Y.

MUTH'S HONEY-EXTRACTOR, SQUARE GLASS HONEY-JARS, TIN BUCKETS, BEE-HIVES, HONEY-SECTIONS, &c., &c.

Apply to CHAS. F. MUTH, CINCINNATI, O.
P. S.—Send 10-cent stamp for "Practical Hints to Bee-Keepers." 11fd

ALL DOVETAILED SECTIONS, LANGSTROTH AND | BROOD AND WIDE CHAFF HIVES, | FRAMES, SHIPPING - CRATES, WIRE NAILS, ETC., ETC.

Send for Circular.
GEO. WHEELER, NORWICH, CHENANGO CO., N. Y.
2-3-11d

DADANT'S FOUNDATION FACTORY, WHOLE-
SALE AND RETAIL. See advertisement in
another column. 3btd

Those

Desiring to
Get GOOD**ITALIAN BEES**

AND QUEENS, or EGGS OF THOSE POPULAR

WYANDOTTE FOWLS,Should not
fail to read
my new cir-
cular andPrice List, sent free to all applicants. Send your
address, plainly written, to **J. C. BOWMAN,**
67-9-11d North Lima, Mahoning Co., Ohio.**PURE ITALIANS.**

	May	June	June 22
		1st to 18	to Oct. 1
Tested queens	\$2.50	\$2.25	\$1.75
Untested queens		1.25	1.00
Bees per pound	2.00	1.50	1.00
Nuclei per comb of 4000			
bees and brood	1.75	1.25	.90
Silverhull buckwheat, \$1.20 per bushel. Instructive circular free.	S. C. PERRY,		
67-11d	PORTLAND, IONIA CO., MICH.		

DAKOTA-RED POTATOES. One pound by
mail, postpaid, for 50 cts. Supply limited.
67-11d **J. E. BRISTOL,** Harpersville, Deane Co., N. Y.**30 COLONIES OF ITALIAN BEES FOR SALE.**
6-8d **M. ISBELL,** Norwich, N. Y.**PRICES REDUCED.**Comb foundation, equal to any in the market,
at reduced prices. Send for samples and price list.**J. G. WHITTEN,**
67-11d Genoa, Cayuga Co., N. Y.**BE SURE**To send a postal card for our illustrated catalogue of
APIARIAN Before purchasing **SUPPLIES**
elsewhere. It con-
tains illustrations and descriptions of every thing
new and desirable in an apiary.**AT THE LOWEST PRICES.****ITALIAN QUEENS AND BEES.****J. C. SAYLES,**
F-12db Hartford, Washington Co., Wis.**BOOKING + ORDERS.**Why not buy your Queens and Bees direct from
the breeder? 25 cents saved is 25 cents made. I am
now booking orders for Queens and Bees, to be de-
livered in April, May, and June. Send for my new
Price List. Address 4-5-6-7d.**W. S. CAUTHEN,**
PLEASANT HILL, LANCASTER COUNTY, SOUTH CAROLINA.**DADANT'S FOUNDATION FACTORY, WHOLESALE and DETAIL.**
See advertisement in another column. 5b7-11d**IF YOU WANT****A GOOD ONE-PIECE SECTION CHEAP.**Send to us. Sample and Price List Free.
SMITH & SMITH, KENTON, HARDIN CO., OHIO.
2tdb**BLUEBERRY.** A valuable Fruit, succeeds
fruit to grow for market. Two dozen plants by
mail, \$1. Descriptive price list free.**DELOS STAPLES,** West Sebawa, Ionia Co., Mich.
3-8db**VANDERVORT
COMB FOUNDATION MILLS.**Send for samples and reduced price list.
2tdb **JNO. VANDERVORT,** Laceyville, Pa.**The All-Purpose Hive, with
REVERSIBLE CRATE,**With or without a beespace. White-poplar nailed
sections. Given foundation, etc. Wax worked
at 10 and 12 cts. per lb. English Rabbits. Send for
price list to
3-8db **GEO. F. WILLIAMS,**
New Philadelphia, O.**HIVES. 1885. HIVES.
SECTIONS CHEAP.**Sections of white basswood, kiln-dried. Send for
sample, also price list. **A. D. BENHAM,**
67-11d Olivet, Eaton Co., Mich.**MISSOURI.****THE ONLY MANUFACTURERS IN MIS-
SOURI,** of Apianian Implements. Send for
Circular and Price List of our Hive with the **Re-
versible** Surplus arrangement for comb honey.
Also **Smokers, Comb Foundation, Italian
Queens, etc.** **KENNEDY & LEAHY,**
P. O. Box 11. **HIGGINSVILLE,**
5tdb Lafayette Co., Mo.**IMPORTED CARNIOLANS.**Grades and Prices of queens Spring June J. & A. Fall
Unselected selected queens each \$ 1.00 60c \$ 5.00 \$ 4.00
First-class 2.00 5.00 1.50 1.00
Reared in Carniola. Safe arrival by mail guaranteed. Same
prices for imported Italians. For circular, address **MRS.**
FRANK BENSON, Astoria, N. Y. Send 2-cent stamps (register-
ed) and post-office order to **FRANK BENSON,** Mendon, ORK-
MANA 3tdb**FOR SALE!****CHOICE SEED CLOVER AND POTATOES.**

By Freight or Express, | mail

	1 bus' 1	peck	lb.	lb.
Alsike Clover	\$10.00	\$2.75	20c	40c
White Clover	10.00	3.00	20c	40c
Hall's early peachbloss po- tatoes	1.25	50	15c	35c
Ontario	1.25	50	15c	35c

Address **E. S. HILDEMANNS,**
Ashippun, Dodge Co., Wis.Please mention this Journal if asked for the above
advertisement. 2tdb**Dunham & Vandervort Foundation**We have bought a large stock of choice yellow
beeswax, and can furnish Dunham comb fdn. for
brood comb, cut to any size, for 50c per lb.; thin and
bright yellow fdn., for sections, at 55c per lb. Extra
thin Vandervort fdn., 10 to 12 sq. feet to the lb., for
6c per lb. We guarantee our fdn. to be made of
pure beeswax, and not to sag. Will work up wax
for 10c per lb. for brood, and 15 and 20c per lb. for
sections. To induce our customers to order fdn.
early in season, we will allow 10 per cent discount,
on all orders received before the first of May.**F. W. HOLMES,**
5tdb Coopersville, Ottawa Co., Mich.**1885 ITALIAN QUEENS 1885**Untested Queens in March and April \$1.25
Afterward 1.00**J. S. TABLOCK,**
5tdb LULING, CALDWELL CO., TEXAS.**DIXON & DILLON,****Parrish, Franklin Co., Illinois.**
Manufacturers of and Dealers in all kinds of
APIARIAN SUPPLIES,
at the lowest prices. Also pure **ITALIAN BEES**
and **QUEENS.** No other bees kept in our yards.
For further information, send for price list.

Bee-Hives AND Sections!

NEW SHOP AND NEW MACHINERY.

The Largest Manufacturing of Bee-Hives, Sections, etc., in the World.

Our Capacity now is a Carload of Goods Daily.

NOTICE.

By enlarging our factory last year we were put behind with our work so that by spring we were obliged to return many orders. Now we have ample stock ahead, and can fill orders promptly.

Write for our new price list for 1885.

G. B. LEWIS & CO.,

191fd

WATERTOWN, WISCONSIN.

Established 1855.

HEADQUARTERS BEESWAX

We have constantly on hand a large stock of Domestic, Imported, and Refined Beeswax in original shape, which we offer to manufacturers of Comb Foundation at lowest prices. Write to us for prices, stating quantity wanted. Address

R. ECKERMANN & WILL.

Beeswax Bleachers & Refiners.

STRACUSE, N. Y.

N. B.—We have low freight rates to all points on quantities. 24-11db

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column.

HEDDON'S

32-PAGE

CIRCULAR FOR 1885

NOW READY.

JAMES HEDDON, DOWAGIAC, MICH. 41fdb

BEES BY THE POUND.

From April 20 to May 23, \$1.60. Dollar queens to go with bees as above, \$1.40 each. After May 20, bees by the pound, 80 cents. 2 frame nuclei, with dollar queen, each \$2.00; 3-frame nuclei, with dollar queen, each, \$2.50; 9-frame in Simplicity body, with dollar queen, each, \$5.00. All wired combs. Writing to go West, I will sell 200 colonies, after May 20, very cheap. Write for prices, stating what is wanted. Fdn., heavy, 45c. Light, 55c. Cut as desired. Wax worked at 10 cts. per lb. G. W. GATES, 5-6-7-8-9d Bartlett, Shelby Co., Tenn.

ROOT'S CHAFF HIVES

Still lead, and we furnish them at

Hard-Pan Prices.

Our 5th Annual Circular, containing a full line of Bee-Keepers' goods, will be sent free on application. 51fdb S. C. & J. P. WATTS, MURRAY, CLEARFIELD CO., PA.

BEES

For Pleasure and Profit. A new book of 172 pages. Profusely illustrated, and up to the times. By Rev. W. Balantyne. Price 50 and 75 cents. Address the author, New Concord, Musk. Co., O.

A Splendid Offer.

To all those who will send us at once their subscription to the

American Apiculturist,

For one year (1.00) and \$1.60 extra, or \$2.00 in all, we guarantee to send a choice Italian queen worth \$1.50. These queens are bred for us by a careful and reliable queen-breeder. We also give away to all those who will send us their address, plainly written, an interesting and valuable little pamphlet, the "Bee-Keeper's Companion." Send us your address at once. Address

5-6-7-8d

SILAS M. LOCKE, Salem, Mass.

1885.

CHOICE ITALIAN BEES AND QUEENS From Imported and Selected mothers, and also from the noted Doolittle strain of GOLDEN ITALIANS. Send for circular.

SIMON P. RODDY,

5-10db

Mechanicstown, Frederick Co., Md.

THE NEW WHITE GRAPE,

NIAGARA.

Other vines and plants

51fdb

by mail. Circulars free. Address JOHN E. EVES,

Mooresville, Morgan Co., Ind.

SIX SYRIAN QUEENS, warranted purely mated, for \$6. Single queen, \$1.25. Tested, \$3 each. Italians, same price. Four frame nuclei, L. frame, with tested queen, \$5 each.

6-7-9d

I. R. GOOD, Sparta, Tenn.

Foundation Machines, L. size, \$3.75.

Italian Bees, Queens, and Honey, a specialty. See new circular.

31fdb

OLIVER FOSTER, MT. VERNON, LINN CO., IOWA.

EGGS FOR HATCHING.

From Choice Brown Leghorns, S. C., \$1.00 for 15; 3 settings, \$2.50. 75 eggs, \$4.00. 51fdb

R. J. NASH, Williamson, Wayne Co., N. Y.

At KANSAS CITY, MO.,

I Raise Pure ITALIAN BÉES FOR SALE.

Untested Queens in May	.....	\$1 50
" " " June	.....	1 25
" " " after June	.....	1 00

Tested Queens, double the above prices.

Bees, per one-half pound, same prices as untested queens. For discounts, see my circular. I warrant my untested queens to be purely mated. If any of the friends who have dealt with me heretofore are not satisfied, I shall be glad to have a full statement of the matter from them, and will do the best that I can to render satisfaction.

51fdb

E. M. HAYHURST, P. O. Box 1131.

Wholesale and Retail.

BEE-KEEPERS' & SUPPLIES

Popular and Doveswood Sections a Specialty.

SEND 2-CENT STAMP FOR SAMPLE and PRICE.

S. D. BUELL, UNION CITY, MICH.

21fdb

GIVEN FOUNDATION. Wax worked for a share, or by the pound. Foundation and bees for sale. H. D. BURRELL,

51fdb

Bangor, Van Buren Co., Mich.

WHO WILL BUY? WHO? 80 COLONIES OF ITALIAN BEES for sale by the colony or pound. Simplicity Hives,

1 1/2. Wired frames, combs Langstroth, 9 1/2 x 1 1/2, are all worker-cells, and straight as boards. The finest lot of bees in the market. Circulars and Given foundation for sale. Send for Circular.

5-6-7-8d

T. H. KLOER,

Terre Haute, Vigo Co., Ind.

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KIND WORDS FROM OUR CUSTOMERS.

OUR TEN-CENT POULTRY-BOOK.

Send me two more poultry-books, and charge the same on No. 8, page 356. S. H. CORBIN.
Fabius, N. Y., Feb. 12, 1885.

OUR \$3.75 PLATFORM SCALE.

Our dealer sells the scales for an even \$10.00. The freight on 45 lbs. was \$1.15. W. G. HAYES.
Pleasant Mound, Ill.

GLEANINGS AS AN ADVERTISING MEDIUM.

My advertisement of Dec. 15, 1884, brought me between 15 and 20 answers. I am not experienced in the advertising business, but I thought that pretty good. FRED F. ROL.
Jordan, Ind., March 24, 1885.

I am going to have more work than I can stand, and I may as well set up some of the brakes now. GLEANINGS is a little too good sometimes, as an advertising medium. E. M. HAYHURST.
Kansas City, Mo., April 4, 1885.

OUR 75-CENT TELEPHONES,

To Tell When the Bees are Swarming.

This instrument is a success, as many of the friends have testified. Prices by mail are 16 cents extra. Each instrument consists of two sounders, with 100 feet of insulated wire, etc. If you want more wire, we have it put up on spools of 100, 200, and 300 feet each. Prices 16, 30, and 45 cts. per spool. If wanted by mail, postage on the spools is 5, 8, and 11 cents respectively. The 300-foot spool, in addition to the 100 feet that goes with every instrument, is probably as great a length as is advisable with these cheap instruments. This wire is made of composition especially adapted to these small telephones. A single wire running through your apiary will tell anybody in the room where the sounders are, at once when the bees are swarming. If the house is still, it could easily be heard in the adjoining room. The instruments are probably equal to any in the market, for such short distances, for a speaking telephone. But, please remember they are not practicable for much over the 400 feet mentioned. When every thing is very still, in the night for instance, they can be used for conversation as much as a quarter of a mile away. You can turn corners with them, if you wish, but some of the sound is lost at every turn.

A. I. ROOT, Medina, O.

The North-Shade Apiary

Holds the field this spring. Our bees have wintered well on fall honey and honey-dew (bees are Italians). Full colonies in either the L. or the Gallup hives, for May delivery. Nuclei, Queens, and bees by the pound, for the season. Price List Free. 8-911d
O. H. TOWNSEND, ALAMO, CAL. CO., MICH.

FOR SALE. DOLLAR QUEENS, AFTER APRIL 1.

And \$2.00 Tested queens from one of A. I. Root's best imported, or from a tested Cyprian. 8d
OUSTAV BOHN, SAN BERNARDINO, SAN BEB. CO., CAL.

WANTED!

ORDERS FOR BEST FOUNDATION.

I use the Given Press; have dies for making sheets of foundation, Langstroth size, or 11x14. Can make 11x12. Wax worked for 10c. per lb. I also have a few second-hand L. hives for sale cheap. Send for prices to

JOHN H. MARTIN.

HARTFORD, WASH. CO., NEW YORK.

25 GILT BEVEL-EDGE CARDS, with name, 30c.; 50 chromo cards with name, 10c. 8d
H. EDWIN ADAMS, Borden town, N. J.

HENDERSON'S WHITE-PLUME CELERY, 5c per packet. A. I. ROOT, Medina, O.

EXCHANGE DEPARTMENT.

Notices will be inserted under this head at one-half our usual rates. All ads. intended for this department must not exceed 5 lines, and you must say you want your ad. in this department. We will not be responsible for any error.

WANTED.—To exchange, for bees by the pound, nuclei, or full colony, any of the following nursery stock: 2-year-old apple-trees, 3 to 4 ft.; 2-year-old plum-trees, 4 to 6 ft.; orange quince, 2½ to 3 ft.; Evergreens, Arborvitae, Norway, and Black spruce, 1 to 2 ft., just right for hedges and screens. Also Cuthbert raspberry and strawberry plants and flowering shrubs, vines, etc.

8d D. G. EDMISTON, Adrian, Lenawee Co., Mich.

WANTED.—To exchange Brown Leghorn eggs (from stock of W. E. Banney), for Italian queens or bees. W. H. OSBORNE, Chardon, O.

WANTED.—To exchange 4-piece dovetailed sections for bees or Italian queens. 8d W. S. WRIGHT, Battle Creek, Mich.

WANTED.—To exchange. I will exchange a first-class Organ and a good Melodeon, or back VOLUMES of GLEANINGS, *American Bee Journal*, and the Poultry journals, for bees in L. frame; also fancy exhibition coops for bees. Make offers. H. S. HOUSE, Manlius, Onond. Co., N. Y.

Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they want to dispose of, we will insert notices free of charge, as below. We do this because there is hardly value enough for these queens to pay for laying them up and keeping them in stock, and yet it is often thus quite an accommodation to those who can not afford higher prices.

QUEENS FOR SALE.—Hybrid queens, 50 cts. each; black queens, 25c. each, from June 1 to Oct. 1. Safe arrival guaranteed. R. H. BAILEY,
7-11db P. O. Box 81, Ausable Forks, Essex Co., N. Y.

Three tested Italian queens, at \$2.50 each.

M. ISBELLI, Norwich, N. Y.

I have 5 hybrid queens, ready April 15. Price 45c each. W. C. WRIGHT, Reagan, Falls Co., Tex.

I have a few first-class queens from a pure mother, reared last autumn, that produces hybrids, which I will sell for 75 cts. each, and guarantee safe arrival. OSCAR F. BLEDSOE, Grenada, Miss.

We have four hybrid queens to dispose of by the 20th of April, at 60c each; also some black queens by May 1, at 35c each. No discount on quantities. KENNEDY & LEAHY, Higginsville, Mo.

I have six good hybrid queens to be removed about June 1. If any of the friends want them I will ship them about that time at 60c each, safe delivery guaranteed.

D. O. WAKEFIELD, Waverly, Lan. Co., Neb.

Situation Wanted.

SITUATION WANTED by an experienced bee-keeper. E. O. TUTTLE, Hampden, Mass.

BEE-KEEPERS, LOOK AT THIS!

5tfdb **J. S. TADLOCK,**
LULING, CALDWELL CO., TEXAS.

RAPE SEED, 15c PER LB.: 10 LBS., \$1.00. **Spider-
son Plants,** \$2.00 per lb. **Simp-
son Plants,** \$5.00 per thousand. Must inclose 18c
per lb. for postage. **ANDREW GURNEY,**
7-10db College Hill, Poughkeepsie, N. Y.

Bee-Hives AND Sections!

NEW SHOP AND NEW MACHINERY.

The Largest Manufactory of Bee-Hives, Sections, etc., in the World.

Our Capacity now is a Carload of Goods Daily.

NOTICE.

By enlarging our factory last year we were put behind with our work so that by spring we were obliged to return many orders. Now we have ample stock ahead, and can fill orders promptly.

Write for our new price list for 1885.

G. B. LEWIS & CO.,

19tfd WATERTOWN, WISCONSIN.

A Splendid Offer.

To all those who will send us at once their subscription to the

American Apiculturist.

For one year (1.00) and \$1.00 extra, or \$2.00 in all, we guarantee to send a choice Italian queen worth \$1.50. These queens are bred for us by a careful and reliable queen-breeder. We also give away to all those who will send us their address, plainly written, an interesting and valuable little pamphlet, the "Bee-Keepers' Companion." Send us your address at once. Address

5-6-7-8d SILAS M. LOCKE, Salem, Mass.

Established 1855.

HEADQUARTERS BEESWAX

We have constantly on hand a large stock of Domestic, Imported, and Refined Beeswax in original shape, which we offer to manufacturers of Comb Foundation at lowest prices. Write to us for prices, stating quantity wanted. Address

R. ECKERMANN & WILL, SYRACUSE, N. Y.
Beeswax Bleachers & Refiners. N. B.—We have low freight rates to all points on quantities. 24-11db

30 COLONIES OF ITALIAN BEES FOR SALE.
6-8d M. ISBELL, Norwich, N. Y.

Strawberry Plants.

I will sell plants till the 15th of May next, at the following rates, well packed and delivered at express office.

Pure Crescents, per thousand	\$1.50
Pure Wilsons, " "	2.00

C. F. TISON, Centralia, Marion Co., Illinois.
7-9db

Simply Send me Your Name

and address, plainly written on a postal card, and I will send in return my circular and price list of Italian and Holy-Land Bees and Queens, free.

7-10db J. C. NICHOLS, LIGONIER, NOBLE CO., IND.

WANTED. STUDENTS, Ladies or gentlemen, to learn PRACTICAL RAILROAD and COMMERCIAL TELEGRAPHY. Line and instruments furnished free. Board reasonable. Address

MR. and MRS. A. R. UNDERHILL, La Grange, Lorain Co., Ohio.
7tfd

BEES

I expect to be able to furnish 1, 2, and 3 frame nuclei the last of May and first of June. Send for prices. DAN WHITE, 7tfd New London, O.

F. A. & H. O. SALISBURY'S CATALOGUE

SENT FREE ON APPLICATION.

BEE-KEEPERS' SUPPLIES AND ENGINES.
21d CEDDES, NEW YORK.

DIXON & DILLON,

Parrish, Franklin Co., Illinois.

Manufacturers of and Dealers in all kinds of

APIARIAN SUPPLIES,

at the lowest prices. Also pure ITALIAN BEES and QUEENS. No other bees kept in our yards. For further information, send for price list.

BLUEBERRY. A valuable Fruit, succeeds fruit to grow for market. Two dozen plants by mail, \$1. Descriptive price list free.

DELOS STAPLES, West Sebawa, Ionia Co., Mich.
3-8db

ROOT'S CHAFF HIVES

Still lead, and we furnish them at

Hard-Pan Prices.

Our 5th Annual Circular, containing a full line of Bee-Keepers' goods, will be sent free on application.
5tfd C. C. & F. WATTS, MURRAY, CLEARFIELD CO., PA.

OLD TYPE FOR SALE.

We have still on hand 76 lbs. of our old nonpareil type for sale. For a sample of it, see any number of GLEANINGS previous to May 15, 1884. Also 17 lbs. of Italic, if desired. As it is all packed, we can not divide either lot. The Roman includes 5 lbs. and over of "negatives;" that is, the words *the*, *and*, *that*, *into*, *than*, etc., are made all on one body, thus facilitating composition. We offer the lot at 20 cts. per lb. A. I. ROOF, Medina, Ohio.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column. 3tfd

PURE ITALIAN BEES

Full Colonies, Nuclei, and Queens a specialty. If you intend buying bees or queens this season, send for my circular and price list. You will save money by so doing. 7tfd

C. C. VAUGHN, Columbia, Tenn.

SIX SYRIAN QUEENS, warranted purely mated, for \$6. Single queen, \$1.25. Tested, \$3 each. Italians, same price. Four frame nuclei, L. frame, with tested queen, \$5 each.
6-7-8-9d I. R. GOOD, Sparta, Tenn.

Foundation Machines, L. size, \$3.75.

Italian Bees, Queens, and Honey, a specialty. See new circular.

3tfd OLIVER FOSTER, MT. VERNON, LINN CO., IOWA.

SECTIONS.

I am selling those beautiful ALL-IN-ONE-PIECE BERLIN SECTIONS at \$4.50 per thousand, shipped from our factory, which will be a great saving in freight to all west of Detroit. Send for free circular, and get prices for hives in flat, and made up. Frames, Foundation, Smokers, and all useful appliances for the apiary.

M. H. HUNT,

7tfd Bell Branch, Wayne Co., Mich.

1879. ITALIAN QUEENS. 1885.

For Italian queens in their purity, and that can not be excelled; Comb Foundation and supplies generally, send for circular.

7tfd T. S. HALL, Kirby's Creek, Jackson Co., Ala.



Vol. XIII.

APRIL 15, 1885.

No. 8.

TERMS: \$1.00 PER ANNUM, IN ADVANCE.
2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00;
10 or more, 75 cts. each. Single Number,
10 cts. Additions to clubs may be made
at club rates. Above are all to be sent
TO ONE POSTOFFICE.

Established in 1873.

PUBLISHED SEMI-MONTHLY BY
A. I. ROOT, MEDINA, OHIO.

Clubs to different postoffices, NOT LESS
than 30 cts. each. Sent postpaid, in the
U. S. and Canada. To all other coun-
tries of the Universal Postal Union, 18c
per year extra. To all countries not of
the U. P. U., 42c per year extra.

CAN BEES BE MADE TO HIBERNATE?

HOW MUCH COLD, AND HOW LONG, WILL BEES
STAND IT AND NOT FREEZE?

AMONG my earliest recollections I remember of going through a piece of woodland at the close of a sunshiny day in March, and there finding dead bees (as I supposed) on the snow. A kind of pity came over me for the poor little things, so I picked one up and looked at it, when a new thought came over me, which was that I would carry some of them home and show them to father, as he had been a keeper of bees, although he had none at this time. It so happened that I had a small box in my vest pocket, and in thinking how I could carry them home I brought into requisition this box. After putting 15 or 20 of the dead bees in the box I put on the cover and slipped it in my pocket, not thinking of it again until all were gathered around the fireside at night. I now thought of it, telling father how I had picked up the dead bees in the woods; and upon taking the box from my pocket we were all greatly astonished to hear a loud humming, with much commotion going on inside; for the warmth of my body had brought my dead bees to life. Father said he believed he had heard of bees being chilled and afterward reviving when the sun warmed them up, and proposed that I feed them some honey, which we chanced to have in the house. That night, boy fashion, I planned out how I could get a swarm of bees out of those dead bees on the snow, for there was a lot of them.

The next morning, much to my sorrow I found it raining when I awoke. This rain, I thought, would surely spoil my bees in the woods, and my vision of

a swarm of bees began to look dim to what it did the night before. About 10 A. M. it stopped raining, and I started out with a box for the bees, although I hardly expected I could revive the wet dead things. Arriving where they were I took one in my hand and breathed on it a few times, when, to my great satisfaction, it began to move. I now picked up my box full, leaving a few still on the snow. These all revived, and were put with the rest. The next day I chanced that way again, and tried to revive some of those left on the snow, but failed entirely, although I carried quite a number in my pocket all day. The weather had been freezing cold for six or eight hours before my last trial, and I laid it to this, why I could not revive the last.

I could tell the juveniles how I fed them, and worked for my bees to grow into a swarm, until one by one they died; and how a neighbor found a bee-tree near where I found those bees, if such were the object of this article; but as the heading will show, I started out to tell you something regarding the hibernation of bees; and the reason I spoke of this incident at all was that these chilled bees which I picked up were hibernating more really than those of friend Clarke have been during the past winter, fixed upon his "tree-trunk" principle.

Time passed on, and I became the possessor of not only one colony of bees (as I so desired to in those early days), but of so many I could count them by scores. During the past 16 years I have many times revived chilled bees, but could never revive a bee after it had been frozen, although friend Root tells us on page 127 they can be revived after being exposed to a zero temperature, or something of like import. I have read somewhere that as soon as the juice inside the bee becomes frozen, the

tissues of the different organs would be ruptured, which necessarily would cause death; and all of my experience proves the writer to be correct, although some claim to have revived frozen bees. Only yesterday I caused fourteen healthy bees to be chilled on the snow in a temperature of 40°. As soon as chilled, seven were taken to the cellar, where the same temperature would be continued, while the other seven were left on the snow all night, the mercury standing at 8° below freezing this morning outside. Upon bringing those from the cellar, where it was warm, they began to breathe in less than three minutes, while the seven, brought from the snow at the same time, and put beside those from the cellar, showed no signs of life after being warmed one half-hour. Hence I concluded that, as soon as a bee freezes, it is dead past revival.

Well, friends, you can call the above a rambling preface, for I have now just got to what I started to speak of.

Some four or five years ago Prof. J. F. Boynton, the noted scientist who exposed the Cardiff-giant fraud, became interested in bees. After keeping bees a year or so he came to visit me; and in our bee-talk he said that he was going to institute a new plan of wintering bees. Upon asking him what the plan was, he said that he had ascertained that, if bees flew out of the hive when the temperature was at 46°, they could be revived after becoming apparently lifeless for 48 hours, and he was sure that, if an even temperature of 46° could be kept up, that 48 days or longer could be passed as safely as a shorter time. I told him that I thought he was wrong; but, for the moment admitting the correctness of the thing, asked how he was going to get a whole colony into the hibernating state. He said he could do it; but as I would not believe his first proposition he would not explain the last. He also said he would prove that his ideas were correct, during the next winter, and give the bee-keepers of the world a plan whereby they could winter bees every time, and that without the consumption of a pound of honey. That fall he was called from his home, and I have not heard from him since, except that his bees all died through their not being cared for.

When friend Clarke gave out his hibernation theory I fell to thinking of Prof. Boynton's plan, and tried it twice the past winter as far as individual bees were concerned. Twelve bees were chilled and placed in the cellar, where the temperature was 42°. Every twelve hours one was brought to the fire and warmed. After the fifth bee was revived, or more than 60 hours had elapsed, no more could be brought to life; also it took a little longer each time to revive them. The first revived in about three minutes; the second in about four minutes, etc., while it took nearly ten minutes to revive the fifth one. In this, friend Root will find something a little more definite than he gave on page 127. It occurred to me yesterday, that, if the bees which were to be chilled were first allowed to fill themselves with honey, perhaps Prof. Boynton's theory might work, so I shall make one more trial of it.

If, after reading this, any one can see how the thing can be done, let him go to work till a sure, non-consuming, hibernating plan of wintering bees is brought about, which shall bless future generations, and take from this generation our present lottery plan, with all its anxious thought.

16—G. M. DOOLITTLE, 40—80.

Borodino, N. Y., April 2, 1885.

Now look 'e here, old friend; even if a bee is killed as soon as the juices of his body are frozen, I am not quite ready to give up that a zero temperature for a little while kills him. A few winters ago I was astonished to find that cocoons hanging to apple-trees contained a liquid not frozen, even during severe wintry weather. As soon as the insect was cut open, however, it froze instantly. These cocoons were in a hibernating state on the fruit-trees. There they hung on the twigs, while it was zero weather day after day, and yet it seemed as if they *could not* be frozen solid unless you mashed the life out of them. We know that frogs, fish, snakes, and other reptiles, freeze up and thaw out; but, are they frozen solid clear into their vitals? I wish somebody could tell us. I did not know how hard freezing a bee would bear and come to life, and I did not know how long he could stand any kind of freezing; but since you have given us the result of your experiments, I think I know more than I did before. This question is interesting, because there have been inquiries several times in regard to how low a temperature we must expose honey-combs to freeze out the eggs and larvæ of the bee-moth. Can Prof. Cook tell us any thing about the way in which the larvæ and cocoons of insects bear zero temperatures without injury? Do they keep warm inside, or do they freeze up solid, and thaw out again? Somebody has said that the sap in trees is in a liquid state, even when every thing else is frozen up solid; but as soon as a twig is crushed, the juices freeze immediately. I am pretty sure this is not so, but there may be a good deal of truth in it. Henderson said a while ago we should plant our early peas very thick, because they *keep each other warm*. How much do we know, and how much do we not know?

D. A. JONES'S BROOD-FRAME.

ITS SUCCESS IN CANADA.

ON page 155 we gave a description of this frame, giving dimensions, etc. Below, we give an engraving of the frame. As the dimensions were given on page 156, we need not repeat them here. It seems to me a little strange that a deep frame like this should find so much favor in Canada, when our bee-keepers of the United States so universally decide in favor of the shallow L. frame. It can not be altogether on account of difference in climate, because we have many successful bee-keepers in localities as cold as it is in Canada. We shall have to explain it, I presume, on the ground of honest differences in opinion, or because our Canadian friends have got used to this kind of frames. It seems to me it would be an excellent thing for our friend Jones to come back to the L. frame, but I presume he thinks it would be excellent to have us adopt *his* frame. There is this we shall have to admit, that our Canadian friends as honey-producers rank fairly with almost any in any country on the face of the



globe. California gets ahead a little, when they have a booming season, but I do not believe she does much, year after year.

ANOTHER CHAPTER IN REGARD TO SAYING THINGS WERE NOT THERE.

LEARNING HOW TO DO BUSINESS SO AS TO AVOID MISTAKES AND MISUNDERSTANDINGS.

MR. ROOT:—You sent me only fifty wooden-corner frames. You owe me fifty frames. I put frames together to-day, and found out you had sent only 59 instead of 100 frames. I hope you will make things all right. The other things are all right. I am pleased with them. A. B. OZLER.

Greenspring, Pa., March 12, 1885.

I do not know any other remedy for these troubles than to keep this department standing until the friends learn by these illustrations how to be careful in opening goods. With the above letter our friend incloses also a caution sheet on colored paper. This caution label reads as follows:

Caution!—When unpacking goods in this package, please be very careful not to throw out any piece with the straw. In many cases where goods have been reported short, missing articles have been found in the straw. Also look in all the boxes; for we often crowd small articles inside of others.

The matter was traced up as usual, and our head packer was the one who put them up, so we wrote to our friend that he must be mistaken. Well, here is the reply:

Your letter is this evening received. I have found the frames. I will tell you how it happened that I made the mistake. I was putting the frames together in the evening, and one lot was carried to the cellar, and I did not find them till to-day. My wife sent me to the cellar to get a bucket of coal, and I found the frames there, and they are all right. A. B. OZLER.

Greenspring, Pa., March 20, 1885.

Now to be brief. Within the past few days we have received the following letters:

Well, Laura, you were right about those other 20 rabbits wrapped up in printed paper. There were 3 bunches of 20 each in the box of tin separators for the wide frames, and 3 bunches of 20 each in one of the big crates, making the 120 in all, correct. Now for the "wherefore." Eight of the hives I got were for my brother; he lives $\frac{1}{2}$ mile closer to town than I, and when we got home with the goods he said he would take off from the wagon one of the big crates, and so we did; but after a few days he hired me to set up his hives (and, as I said before, one of the crates was broken, so he took that one), so I went after the crate; but before I got there he took out one bundle of the rabbits and never said a word to me about them until after the other 20 came, then he could say there were 20 down at his house, and he knew all the time I was short 20. Brother R., don't accuse your clerk for not putting up the goods right, for he did his work all O. K. It was my brother that caused all of the trouble.

Coal Vale, Kan., Mar. 31, 1885.

S. C. F.

In the above case you will notice that the goods had been unpacked and "carted around" quite a little before our friend complained. And then he did not scruple to say positively that the things were not there.

A few days ago one of our boys came to me, saying a lot of pocket-knives were missing in a valuable shipment. I asked him to tell me the circumstances, and he said he opened the box out in the shed, and somebody called him away. After a while he went back and finished checking them off, and he found so many were not sent. I asked him how he knew somebody did not steal four or five boxes. He said he did not *know* positively, but he did not believe they did. I told him I should never dare to send any claim to a manufacturer when goods had been unpacked in that shape; that valuable goods especially should under no circumstances be unpacked in the "shed." I told him to bring the whole of the goods into the store. He made excuse, that they were "awful heavy." To be sure, they were heavy, for there were several hundred dollars' worth of valuable pocket-knives. When he had got the box into the store on a clean counter, I told him to pile up the packages four wide, five long, and five high. This would make just the number there ought to be, and there could not be any mistake or miscount, for any one could see at a glance, if there was not a complete and square pile. You see, we made the goods prove themselves. And you can often do this, friends, when the goods will pile up so that, by multiplying, the precise quantity is known at a glance. After they had done as I said (and it really required much less time than to count the packages, 1, 2, 3, 4, to see if the goods are all there) they drew a long breath of relief.

Here are some friends who declared their goods never reached them. We sent a tracer; and the express company, after considerable trouble, returned us the papers proving that the goods had been delivered long ago. We asked what it meant, and here is their reply:

Upon receipt of yours of the 5th inst. we were as much puzzled as yourself, until we made a thorough search and found the missing box, which was overlooked when received, and placed with other goods received at the same time, hence we were all the while looking for them to come.

THE H. F. MOELLER MFG. CO.

Davenport, Iowa, Mar. 9, 1885.

And still another.

This day I happened to open the box entirely that contained the envelopes you sent me, and to my surprise I found the two handkerchiefs I said you had not sent. Well, I beg pardon; I thought when I opened the boxes of goods I should be sure to find every thing there was in them, that you would not have to tell me to look the goods over again, as you have often told others to do; but I got caught this time, and every thing is all right now.

Clarksville, Tenn., Mar. 23, 1885.

A. SNYDER.

You will notice, friends, that the same caution label was inclosed with the above order also, and yet friend S. wrote us the goods were not there, when he had not even looked into his box of envelopes.

And still another.

The fork I wrote you about being missing, after looking over the straw again I found it. I hope it has not made you any trouble. C. D. DUVAL.

Spencerville, Md., Apr. 4, 1885.

And another still, who declared that we left out a package of honey-knives. See where they went to:

A friend of ours took those honey-knives out of the P. O., and then went into a restaurant and laid them down and came away and forgot them, and forgot that he ever had them in his possession, and they were lately found and delivered to us, so it reflects nothing on you. SMITH & MORGAN.

Columbus, Wis., Dec. 8, 1884.

GROWLERY.

THE CONTENTS OF BEE-JOURNALS.

EDITOR GLEANINGS:—I am in a rather complaining mood to-day, and therefore I trust that you will excuse any thing that I write, which does not exactly agree with your opinions and those of your subscribers. Several times I have laid aside bee-journals, with a feeling that I had gained nothing by reading them; but I always attributed it to my not being in the right mood to comprehend or remember just what I had read. And now, after carefully looking over some back numbers of bee-journals, I find that the subjects treated upon are not those which are most essential to the promotion of our interests; that is, in my estimation.

To be sure, it won't hurt anybody to be well posted in regard to some of these minor details; but, is it necessary and beneficial to protract controversies over "Moral and legal patents," and fill pages which should be devoted to the interests of bee-keepers with talks about rabbits, chickens, silkworms, carp, and carp-ponds, and all of these little matters for which I think the majority of bee-keepers care nothing, or, if they do have any interest in these things, would prefer to purchase books or journals treating those topics and nothing else? I for one shall be glad to see the time when the more important subjects of our occupation are brought to the front and *properly* discussed—not by trying to ridicule or cast aside the opinions of our neighbors, but let each interested bee-master give in his opinion and testimony, regardless of what others have written; and when the subject has been fully discussed, let the editor make a concise summing-up of the different testimonies and ideas, and give his subscribers the benefit of his decision. Would not this manner of dealing with subjects do away with a great deal of this going over and over the same ground which perhaps was discussed two or three months before? for then one could turn back, and, by just glancing at this summary, know just what had been written and what omitted.

During the discussions about the sizes of section boxes, and brood-chambers, and the clipping of queens' wings, also in regard to the reversible frame and the "Heddon supplies," I for one could not tell what the opinions of the bee-keepers nor the editors were without beginning at the start and re-reading all that was written in regard to them; and I sometimes thought that some of those who did write had no definite idea of what they were writing about. I suppose you think this article belongs in the Growlery; but as you have that heading in your journal, perhaps you wish to see it well patronized.

C. H. SMITH.

Pittsfield, Mass., March 24, 1885.

Friend S., your remarks are good, and I

agree with the most of them. But, here we are again, with your letter in print; and yet, if you will excuse me, is there any thing in it very practical or helpful in the *care of bees*? If you want my opinion, I should say, first, I am a little afraid you are in a complaining mood. I have already hurt one brother's feelings, I fear, by declining to publish any more, just now, on moral and legal patents. In deciding what shall appear in GLEANINGS, and what shall not, I believe my sole motive is to serve our readers best, and we have had a host of pleasant letters in regard to what has been said on rabbits, chickens, silkworms, carp, and carp-ponds. Even if we are bee-keepers, I believe the general feeling is that we want to look over the fence occasionally, and see what is going on in the world. I should be very glad indeed to be able to make a wise summing-up of the evidence brought forward in regard to the things you mention; but my experience, judgment, and wisdom, are not equal to the task. The size of section boxes, for instance, I believe we are safe in saying, 4½ square is pretty generally agreed upon; but when it comes to how wide they should be, this involves separators or no separators, and we want the result of more experiments before I should dare to say the point was even *tolerably* well settled. I believe the *general* opinion is, that we do not want queens' wings clipped, but I am almost afraid to say so. In regard to reversible frames, I am satisfied with the one I have given you, but the matter is a good deal a sea of conjecture and indecision as yet. Heddon's supplies, I think, we may sum up as a pretty good thing; but much will depend upon the reports at the end of this coming season. It takes a long while, friend S., to settle decisively these disputed points. A great many of us have decided, so far as *we* are concerned. You will notice in this number that friend Heddon is satisfied in regard to the wintering problem; now, it will probably be a long while before we all agree with *him*, or, in fact, before we *all* agree on a great many other matters.

BAD REPORT FROM HONEY-DEW.

MY losses up to date are two colonies, with indications of one or two more to follow, caused by honey-dew, or its right name, "bug-juice," and as there have been no losses reported in GLEANINGS from others, can it be that ours was of a more inferior quality, as none could be worse, and more deceiving to look at on the outside? Hop honey, I think, would be as good a name to give it, for some of my customers told me that if I could not feed my bees any thing better than hops, they wanted no more of it put up in that shape; for I must confess I sold what looked to be A No. 1 quality of honey that was some of this hop-apis bug-juice, honey-dew honey, that made our pets go wild the past season. The colonies that are affected had stores from it, and those that appear all right have some stores from the season of 1883, this being saved on account of so much apple-bloom last spring, and so the bug-juice, or hop honey, was stored in boxes.

C. L. HILL.

Dennison, Ohio, March 9, 1885.

BEE CULTURE IN FLORIDA.

SOMETHING ABOUT REVERSIBLE FRAMES; HOW IT WORKS IN PRACTICE.

AS I could find no cure for the Florida fever but to partake of the climate, etc., I came here the 12th of Jan., 1885, and it is truly wonderful to witness the change from Maine here. I can hardly believe it is below zero, while here it is summer. Only think of oranges fully ripe on the trees, and bloom now in full, and one of the most delicious perfumes float in the gentle breezes from the blossoms. Trees are putting on a new growth, birds are happy, and so are all the people. We often hear shouts of joy far away in the open pines.

I came here undecided as to a home, but I have fully come here to stay. Of course, there are things we must be denied, but we enjoy much that we can not in a cold climate. Nearly the first thing I did was to look into the bee-works. I found them at work, strange to say, working lively; and on looking into hives I found them strong in brood, and some new honey and comb produced. Yes, in January. I could not find any one who was up to the times in improvements, to get actual facts from; but all agreed that bees did well. Bees are all in box hives or large frame hives, two feet long, and frames 12 inches square, with nothing but a cleated board for cover. If they warp or shrink, so bees creep in, and a wholesale robbery is the result, they get no careful attention. These hives are supposed to be for extracted honey; but, give me a regular L. frame, and a hive that can be controlled every way. The hives have no division-boards, so a light colony stands a poor chance to guard against ants and robbers, as well as being obliged to warm the large open spaces, and cold air that creeps in all around the cover.

I went to see a man who keeps quite a number of colonies, but I was obliged to borrow a large net to protect myself from the bees. I found no one at home; but he came soon, and, to my great surprise, he fed the bees in a large sheet of shells, and also went around and slopped some sugar and water right on to the bees, by lifting the cover and turning it out on the frames. I told him I would not do it for any thing, for it must make more mischief than good, for the syrup ran right out of the front of the hives, and, of course, there would be a general fight and uproar, which there was. I never saw such a cross lot of bees; even the gentle Italians came at me, about as a little boy would at his mamma, after she had given him a bit of sugar, as if to say, "I'll have more." I never could think of opening a hive where bees had been fed in this way, for, oh how some one would be overrun with the robbers! This was in the early part of the day, so a long day would lay out many a would-be good colony, or, at least, lay a foundation for such.

Another man who had seen me transfer a colony thought he would do so with one of his, so he rigged a hive as he thought best, and one morning did the job right on the old stand, and I happened along soon after, when they told me they guessed their bees were fighting. Then I saw what they had done—transferred out of doors, in a very warm day; and as he knew nothing of the effect of honey being where bees could get a free taste, they had got the best of the colony. I told him never to allow a drop of honey or sweets where bees could

get it in the day time. I was afraid he would lose his bees, and so he did. They were robbed, and queen killed, and finally they left and came over into one of my hives, right among the bees. I smoked and united them; and as soon as I found where they came from I paid for them.

I have ten colonies. I do all my transferring in a building; and as I have been on a jump ever since I came here, I do such jobs in the evening, then by morning the honey is all cleaned up, and no excitement follows. I regulate the entrance-blocks and division-board, according to the colony. I have made long days; have done considerable in the orange-groves, and other work, and have been making hives. I have a few sections partly capped now; they are over some frames that I reversed, and I do believe when we reverse them in just the right time that it is one of the greatest improvements ever made, to say nothing of full combs. I think we shall drive the bees into the boxes; at least, it works so with me. I always have the combs down to the frame, and close them up to not more than $\frac{1}{2}$ inch; I think the closer they are, the better the bees work in the boxes, for they have not much room to bulge the honey in the frames; and, too, it seems more to the queen like her own home.

We have here some difficulties to meet that are not in a colder climate. The ants are quite bad, but I believe there is a remedy for all troubles, and I will give mine. To make it cheap and light, I strip up barrel-staves about $1\frac{1}{2}$ inches for large hives, to 1 inch for nuclei. I nail two on front of nuclei and two on back, in a Δ shape, some like a sawhorse, so as to set in old fruit-cans of water. On the large hives I nail on each corner; I allow about 10 inches of legs below the hives, and I find, too, these dishes make an excellent watering-place for the bees, and, by the way, a hive 10 inches high works much easier for me. I also heat quart cans and unsolder them and straighten out; these I nailed under front end of hive, and bend down a little to make an extended alighting-board for bees, all of which works in practice as well as in theory. Shade for hives in many places we can not have. Natural shade I make in this way: Get out slats 4 feet long; cut out a notch near one end. Now sharpen the other; cut open the seam of old bran-sacks, and bind the corners to the four ends of stakes, and you have a shade that you can fix just as you want; and when you work on a hive, just pull up the two on one side, and stand them on the other side of hive. The sticks can be varied so as to shade the entrance and any part of the hive, and bees will work with it, when they will lie idle if not used. Try it, some one; it is not patented. This all may look like work and care; but, how do we accomplish any thing without such? For want of shade, and where ants have the run, many light and heavy colonies have deserted their hives. E. P. CHURCHILL.

Tampa, Fla., March 21, 1885.

I know, friend C., there are many pleasant things about Florida; but at the close of your letter you have suggested some of the unpleasant ones. After my visit in the South, I came home with more of a disposition to thank God for our frosts and snows than ever before. Yes, I think I can thank him even for our unseasonable zero weather; for these same apparent drawbacks have been a large factor in making our Northern

countries what they are. If we raise plants in the greenhouse, they have got to be hardened off, as gardeners term it, before they are fit to go outdoors, and I fear you will find, after you have stayed in Florida a few years, you will begin to suffer for the lack of the "hardening-off" process.

POLLEN, AND ITS RELATION TO BROOD-REARING.

PROF. COOK GIVES US SOMETHING VALUABLE, THAT HAS A DIRECT BEARING ON THIS MATTER OF WINTERING BEES.

EDITOR GLEANINGS:—You and the readers of GLEANINGS will remember that, in a paper sent by me to last GLEANINGS, I said that bees sent me by Mr. Doolittle, dead, as he said, of diarrhoea, showed no pollen in their intestines, but were characterized by the usual odor of diarrhoea, and the feces showed the bacteria which I find in all fecal matter from bees which are suffering or have died of this disease. This is the only case where I have found bees dead or suffering from diarrhoea, that had no pollen in their intestines. I said in that paper that there must have been nitrogen in their food, else we would not have found the bacteria and the putrescent odor. Since writing said article, Mr. Doolittle has written me that the bees were given clean combs in September last, fed wholly on sugar syrup, and reared brood in the winter. He also states that he fed the syrup in small quantities, taking some time to do it, instead of feeding all at once, and that his other bees gathered pollen in autumn—October, I think—but these, he thought, did not gather any.

Since I wrote the other article, Mr. Doolittle has sent me a small piece of the comb from the hive, and I find under honey—I suppose syrup—quite an amount of pollen, so that its presence was easily demonstrated by use of the microscope. Now, the fact of breeding makes the case clear. Bees *can not rear* brood, which always contains nitrogen in the tissues, without nitrogen in the food; but pure sugar syrup contains not a particle of nitrogen. This, then, is further proof that nitrogen was present, and the bees could and did eat it.

Again, to make assurance doubly sure, I took all the fecal matter I could collect from the bees not showing pollen, and carried it to Dr. R. C. Kedzie (our chemist, and a very able one), asking him if it contained nitrogen; and if so, whether the amount was considerable. Here is his reply:

Prof. A. J. Cook:—The material you placed in the hands of the Chemical Department, labeled "Bees-Feces," has been submitted to qualitative chemical analysis, and was found to contain combined nitrogen in abundance. When the material was rubbed up with soda-lime, and heated in a test-tube, ammonia was given off abundantly, as was shown by the odor, and by the blue color instantly imparted to the blue litmus-paper when held in the mouth of the test-tube. I inclose samples of blue paper. There was not enough of the material for quantitative determination. R. C. KEDZIE.

Agricultural College, March 26, 1885.
We see, then, that the bees did have access, and did eat pollen or some similar substance.

Is it not possible—aye, probable—that the bees gathered pollen, or possibly meal, in the fall? Surely the method of feeding, as it would stimulate the breeding impulse, would incite the bees to gather such food. It would have been far better to have fed all syrup at once, and then not to have left the

matter of gathering pollen to a guess. This vitiates and renders doubtful the force of the experiment.

It is hard to say just why the bees had no pollen-husks in the intestines, though it will be remembered that some did. Is it not possible—nay, probable—that such bees ate the jelly, or chyme, prepared for the young bees? Quite possibly they ate up the brood. In either case they would get the nitrogen, and not show any pollen husks or grains in their intestines. Eating meal, too, might account for the nitrogen, and the absence of pollen grains or husks.

The present terribly severe winter must enforce the following points:

Good cellars, and not chaff hives or packing, are the sure conservatories for our bees in winter. They are always economical, and, with proper pains as to food, safe.

Good sugar syrup, or non-nitrogenous food, is much the safest for bees in winter.

Bees, even though fed on pure carbo-hydrates, are not proof against severe cold—they may freeze—with no show of diarrhoea.

Azoturia, which Williams, one of the best authorities, calls a hyper-nitrogenous condition of the system, is a very serious disease which often attacks and destroys horses and other higher animals, consequent upon a diet too rich in nitrogen. Is it not likely that our bees die of azoturia? Cold stimulates them to eat the hearty nitrogenous food which otherwise they might not eat at all. In this case, retention of the feces makes the danger greater.

A. J. COOK.

Agricultural College, Mich., Mar. 23, 1885.

Many thanks, friend C., for the valuable facts you furnish us. You will remember, that in my reply to Doolittle, on page 32, last issue, I suggested that perhaps a little pollen might be found in those five empty combs. As I was well aware, that bees often fill a cell partly with pollen, and fill it out with honey, I supposed friend D. had been careful to look out for them. If the combs are new, such cells may be readily detected by looking toward the light through the comb.—Now, friend C., in regard to cellar wintering in place of chaff hives, do you not need to qualify this advice so as to meet different localities? Perhaps it would take more of the sugar to do it; but with our changeable climate, I am hardly ready yet to advise cellar wintering.

REVERSING FRAMES BY AN ARM PIVOTED TO THE END-BAR.

THE ORIGINAL INVENTOR OF THE HOWES AND HEDDON ARRANGEMENT.

ISEE in GLEANINGS that friend Howes thinks that Mr. Heddon, and no doubt all others that use the pivoting arrangement for reversible frames, are infringing on his invention. Will you please tell Bro. Howes, that, while he may be an original inventor, I used this same pivoting arrangement more than ten years ago, for the same purpose?

You remember, that about the year 1870 Mr. J. M. Price, of Buffalo Grove, Iowa, had a great deal to say about his revolvable-reversible double-acting bee-hive, with which he could produce such extra hardy and prolific queens, which to me was both

amusing and instructive. From him I got the idea of the probable advantages of a reversible frame. In April, 1872, I sold out in Iowa, and came to California, and lived near Lathrop that summer; but during the summer of 1873 and 1874 I lived on the west side of the Great San Joaquin River. I then had about 60 colonies of bees; and as the earliest and best honey was made in mountains, I took them up into the Hospital canyon during the months of February and March, and set them near the house of my respected co-laborer, G. W. Hoxie, who also had a few bees; then in June I would take them back to the river again.

Well, my management, which was altogether new to Mr. Hoxie, soon aroused his enthusiasm for bees, and he was soon ready to try any and every kind of experiment with me, and among them was the reversible frame, instead of the hive, as Mr. Price had done. Our first plan was to fasten a heavy wire to the end bar of the frame, with staples, precisely as described in GLEANINGS, 1884, page 155, and then bend one end back under the bottom-bar, and the other straight out for a supporting-arm. But as this was too unsteady, and, if they filled one side with honey and not the other, it would pull it out of true, we soon abandoned it. We then tried strap iron an inch wide, fastened in the center of the end-bar, just as described on page 156 of same number of GLEANINGS, and bent it out at the top of the frame, just as we did the wire for a frame-support. This did better; but as the frame would sometimes tip when top heavy, we punched a hole through the strap iron, about an inch from the top, and drove a small headless nail through this hole in the end of the frame, which held it true while in the hive. When the frame was lifted out, the strap iron had spring enough to slip off this headless nail, and then turned down, and slipped over the nail at the other end, which reversed your frame, and was then ready for the hive again.

This all worked nicely, and the way it would cause the queens to breed was astonishing; but pretty soon they would commence sticking glue between the strap iron and the end of the frame, and oh what a time we would have to clean off the propolis! But as honey was cheap, and labor high, as I remarked on page 162, present Vol., we abandoned it, although I still have several hives with reversible frames, but of a different style.

Mr. Heddon is the only man I have seen who gave the true effect of reversing the frame, so far as the brood-nest is concerned; viz., in the spring, when the queen is enlarging her brood-nest, it facilitates it rapidly; but when they are crowding her with honey, it diminishes it just as rapidly, for they don't seem to want to take the honey out from below the brood; and just as fast as the young bees hatch out at the top they fill it with honey.

Now, friend Root, if you or any of your readers have any doubt as to what I have written, they can write, inclosing stamps, to the Rev. Geo. W. Hoxie, Applegate, Josephine Co., Oregon. J. F. FLORY.
Lemore, Tulare Co., Cal.

Friend F., a great many of us remember J. M. Price's revolvable-reversible bee-hive; and I felt pretty certain when Mr. Howes claimed to be the first to use such an arrangement, something would come up to show he was mistaken. No one doubts your veracity, friend F. You have been too long before the bee-keeping fraternity.

MORE ABOUT THE MANUFACTURED COMB HONEY.

MORE DEVELOPMENTS, SINCE OUR ARTICLE ON P. 238 WAS PUT IN TYPE.

THE *Grocer's Criterion*, of Chicago, under date of March 16, has an article headed, "When will Humbugging Cease?" and makes a rebash of the article we give from the *Philadelphia Times*, p. 238. The *Grocer's Price Current* of March 14 also contains the following editorial:

Three glass boxes of fine comb honey were on exhibition in a wholesale grocery, Monday. "That is very fine as far as looks go," said the proprietor, "but we only have it on exhibition. It merely represents Yankee skill. That comb and that honey never saw bees. They were manufactured by human hands. The comb is made of paraffine, or beeswax; and the honey, which is also false, is blown in by machinery. We have another kind of honey, which is put up in glass cups, with a small piece of comb in the center. This honey is generally made from cane sugar, glucose, or syrup."

It is the old story over again, and these grocers' papers ought to be ashamed of themselves. This last item quoted is abominable. Before I can believe that any wholesale grocer ever had any such honey on exhibition, or ever made any such speech, I should want the name and place, so that the man can be hunted out, and the matter proven beyond question. If it is really true, that the whole thing is not a complete falsehood, made by some reporter who wanted to get up a sensation, I should say that the proprietor himself was deceived—that he had got some genuine honey that somebody persuaded him to believe was manufactured. It has never been done, and can not be done. Do our grocers' papers delight in having the world believe that every thing is a fraud? Are they judging honey-dealers and honey-producers by the way the grocery business is carried on? I am informed that an item has just come out, giving the name of a butcher-shop in Philadelphia where dog meat was sold as veal. Suppose we come out and declare there is no real veal—it is all dog meat. These stories about the adulteration of honey and other commodities, in spite of all our bee-journals can do, such as have been quoted, are almost as unreasonable and inconsistent; and in spite of all our bee-journals can do, these editorials about comb honey being made of paraffine and glucose by Yankee ingenuity will probably be copied from paper to paper, persuading men that the world is all corrupt, all after the almighty dollar, that true religion and true Christianity are extinct, and that we are all going to the "dogs."

MANUFACTURED COMB HONEY; STILL MORE ABOUT IT.

Jan. 5th I received a letter from my brother, who lives in Denver, Col. (he used to be in the grocery business, so he handled honey some). In this letter he writes about the fine California honey he has just been buying. He says, "We can always be sure that honey which comes from California is pure, as they have nothing cheaper to adulterate it with, while honey which comes from Chicago you can be pretty certain is adulterated with glucose. A gen-

tleman told me that he saw them make comb honey in Chicago that did not have a particle of genuine honey in it, as they made it comb and all." Now, I do not believe a word of it; but, why did this man say so? and why are the people of the West given to understand that the honey of the East is made and adulterated? I can see no reason for it, unless that it is done by men of California (not bee-men, but honey-dealers) to exclude eastern honey, and make a market for California honey. When I received this letter I thought I would write and tell you of it, but I put it off, and probably would not, if I had not seen in last GLEANINGS where Joseph H. Snyder asks the question, "Can honey-comb be counterfeited?" and you say it is a falsehood of the papers. By what I have written, you can see that it is not told by the papers alone, but by men whose interest it is to make people believe that our honey is not as pure as California honey.

Warwick, N. Y.

H. P. DEMAREST.

Friend D., hunt up the gentleman, make him tell him where he saw them manufacturing comb honey in Chicago, and go there and hunt them up. If it transpires, however, that the gentleman whom you mention is found to be a man whose word can not be relied on, it were a pity you hadn't found it out before you sent us this letter. I do not know what does possess people to pass around falsehoods in this way, unless it is their desire to make believe they are better posted than other people.

I clip the following from a Kansas paper. I think that that caps any thing I have seen lately. I think we ought to clip in and help him out with a large "ad."

FRANK D. FRENCH.

Miller's Corners, N. Y., March 11, 1885.

Below is the clipping inclosed with the letter:

"Can make honey that can not be distinguished from pure honey, for eight cents per pound. Send fifty cents in postage stamps for recipe. Address box 4, Wakefield, Neb.

Thank you, friend F. Send us all such notices you can possibly get hold of. As good liquid honey can be bought now almost anywhere for 10 cts. per lb., it seems to me there is not very much of a temptation to manufacture spurious honey. Set down any man as a humbug and swindler who wants to sell a *recipe* for doing something. All recipes of any value are sooner or later found in our recipe-books, or in the industrial papers devoted to that particular class to which the recipe belongs. Fifty cents, or any other sum, for information that can be printed on a little slip of paper, is a swindle.

DO BEE KEEPERS ADULTERATE THEIR HONEY?

This is a question which we should consider very carefully. Bee-keepers should be careful how they follow the advice of Mr. Heddon and Mr. Doolittle and others, in regard to feeding sugar syrup. We should have to go to some old-fogy log-gum bee-keeper to get pure honey, if we should follow their advice. They make a terrible fuss when some one says we sell them sugar. But, what are *they* doing? Are they advancing the sale of pure honey? Not much. Just as long as they feed sugar to their bees they will sell adulterated honey.

Platteville, Wis.

P. H. FELLOWS.

Friend F., I think you are borrowing

trouble unnecessarily. If anybody says that we feed sugar to the bees in order that we may make honey of it, because sugar is fed in the fall for winter stores, I should say such a person would have to talk. The superiority of pure sugar for winter stores over even the best of honey is now so well agreed upon, that it is without question going to be the staple winter stores of the future. If bees are properly fed up in the fall, there will be little if any need of feeding bees in the spring; and when you hear any man talk about bee-keepers adulterating honey with sugar, ask that man to visit some apiary at a time when honey is coming in, and his eyes will soon satisfy him that it is genuine honey, gathered from the flowers, that bee-keepers put up, and nothing else. Remember, also, that it is not what bees *eat*, but what they *gather*, that determines the quality of the honey.

Here is still another, and this time it hits the maple-sugar makers instead of bee-men and grocers. Now, friends, if it is true that men who own sugar-bushes adulterate their maple sugar with cane sugars, let us get good proof, and then show them up without mercy. But I am afraid maple-sugar makers are slandered just as the bee-keepers have been. No doubt owners of sugar-bushes buy cheap sugar; but does it necessarily follow they are using it to adulterate the syrup they sell?

It is an open secret that great quantities of muscovado sugar at six to eight cents have been sold to owners of sugar-bushes, and that the yield of "pure" maple sugar will be larger than ever before. A single owner of a "sap-bush" bought ten barrels of the cheap brown sugar. Imitation butter *must* go.—*Chicago Tribune*.

WINTERING PROBLEM SETTLED.

OR AT LEAST FRIEND HEDDON THINKS IT IS.

I HOPE no one will be startled when I say that I have solved the wintering problem, to *my own* satisfaction. When I say that, notwithstanding I have in past years been quite a heavy loser of bees during winter—bees treated by nature and myself, the same as others in other locations, which wintered well—that for the future I would not give ten cents per colony to have my bees insured against winter losses, I have, to back it up, satisfactory evidence of the correctness of the pollen theory.

One year ago last winter I made extensive experiments regarding the cause of bee-diarrhœa. The winter was such that but little diarrhœa occurred. Although every thing pointed favorably to the theory, yet I was not perfectly satisfied. Knowing that there is some truth in the theory, that all our improvements and discoveries are a slow growth, cultured by many, yet I felt that this slow growth might go on growing until after I had ceased to be, and yet be growing, with little signs of blossoming or bearing fruit. Perhaps I am a little impetuous for something in the near future—something I can profit by, here and now. If I am, this propensity led me to again go into experimenting more than before; and while last winter's experiments cost me more than \$1000, I feel more than paid in the satisfaction I now enjoy over this problem—more

than paid as regards my own future bee-keeping, to say nothing of what I may do for others; for I feel confident that I can now lay down specific rules by which all can winter their bees with *perfect safety every time*. The near future will decide whether or not I am correct. If any such rules have ever before been given us, I know not when or by whom. I am aware that many bee-keepers have supposed that the wintering problem was a simple one, and one which they understood. They thought so because they had never failed of successful wintering. Then they would tell us just how they did it, and the different means and ways reported were almost as numerous as the reporters. And then some one would arise and report failure by the same processes, which proved conclusively that the ways and means provided by the successful reporters were only such as would warrant success with their individual conditions and environments.

I now propose to lay down such rules as I fully believe *all* can succeed with; and without courting any belligerent discussions, I wish to leave my record as a discoverer in this problem, with the actual practical results of the future.

I must first give great credit to Prof. A. J. Cook, with whom I have been corresponding, and sending specimens for the past month, and who has worked out the chemical and microscopic part of the problem in a large degree.

First, having been able to remove the cause of bee-diarrhœa, and, of course, its consequent effects, I have found that bees quite readily succumb to freezing, which I believe is greatly aided by their inability to expel aqueous vapor in a low temperature. By unwarranted and severe exposure to cold, I have frozen to death over 75 colonies, with no diarrhœa whatever. Had I not first removed the cause of diarrhœa, these colonies would have discharged that fecal mass before they succumbed to cold (as we commonly use the term).

Second, this fecal discharge known as bee-diarrhœa is every time composed of nitrogen, as I have been claiming for the last two years; and while, undoubtedly, in 99 cases out of every 100, this nitrogen is taken from bee-bread or floating pollen in the honey, Prof. Cook thinks that *possibly* it may be taken by consumption of bacteria by the bees, which he has found in rare cases swarming in their intestines. We would find bacteria with fermentation. One fall my bees carried in nearly a quart of cider per hive. Though the following winter was not severe, yet those that were confined for three or four weeks showed no symptoms of fecal accumulations at the end of that time. I have seen colonies have diarrhœa badly, with no longer confinement with stores of ripe honey and perfect bee-bread. I have also seen the same fecal accumulations take place with only two or three days' confinement, but at that season of the year when bees were exerting themselves, and consequently consuming pollen daily.

I have just read Mr. Doolittle's article on page 231, and in the *Am. Bee Journal* I read his account of the time and way in which he supplied the colony in question with sugar syrup and no pollen. Scientists know there is no nitrogen in pure sugar syrup. They also know that tissue can not be created, either in the growth of new individuals, or in making up waste, caused by exertion in older ones, without the element nitrogen.

The 200 young light-colored bees, together with

the "patch of brood as big as a silver dollar," show conclusively that Mr. D.'s colony possessed nitrogen, and it seems clear to me that they possessed pollen; for Prof. Cook writes me that, in examining bees and combs from this same colony, he found traces of pollen in the comb, some cases of undigested pollen in the bees' excreta, also bacteria; and later he writes me that Dr. Kedzie, our State chemist, finds this excreta from Mr. Doolittle's bees "containing nitrogen in abundance." Prof. Cook also says that Mr. Doolittle's case appears to him to show very mild symptoms of the disease. I had one colony die with the disease in most radical form over a month ago, from which I sent Prof. Cook diarrhœtic excreta from a top-bar, and pollen from the comb just under the top-bar. He analyzed both carefully with a powerful microscope. He says the excreta was not only almost entirely pollen, but the *same kind* of pollen as that sent him in the comb beneath the top-bar. He concludes by saying, "The pollen you sent had been liberally appropriated by the bees, whose excreta you sent." The Professor also says, that, after many examinations, he is positive that bees never discharge dry excreta. He further writes me that he procured some bees of a neighbor. These bees were lately dead of diarrhœa, and he found their bodies nearly bursting with the dark turbid excreta which, when microscopically examined, proved to be pollen grains held in a watery mixture.

I assert the following, without fear that future discoveries will prove me incorrect:

1. Diarrhœtic accumulations are composed of nitrogen.

2. This nitrogen is practically, and in nearly every instance, taken by way of consumption of bee-bread, or floating pollen, in the honey.

3. Bees can use bee-bread for making chyme, or jelly, for larval food, without getting it into their intestines, thus aggregating fecal matter. But said chyme, being fed to the larvæ, and not consumed by the old bees, they can and do breed in confinement, without accumulating fecal matter, thus engendering disease.

4. Bees may quite easily perish from cold, without any disease whatever.

5. Sugar syrup contains no nitrogen, but more heat-producing elements than honey, hence it is cheaper and safer as a winter food.

6. A low temperature will cause bees to endeavor to add to their methods of producing heat, by way of food, that of exercise, and this exercising will cause a waste of tissue which the bees will try to replenish by consumption of nitrogen. (I find in every case, where my sugar-fed colonies were trusted with a few cells of bee-bread, and then subjected to a low temperature, they ate every particle within their reach.)

7. Bees will let their bee-bread alone as long as the temperature is high enough so that no exercise is needed.

8. Bees may be *forced* to the consumption of pollen by its presence floating in the honey, constituting their winter stores.

CONCLUSION.

If the honey is free from floating pollen, or bacteria, bees can be successfully wintered with it, if put into a repository whose temperature never goes below 40 or 45, if the colonies are well arranged for retaining their heat within their hives, bee-bread or no bee-bread.

To economize in food, and insure freedom from nitrogen, feed your colonies sugar-syrup stores with as little honey and bee-bread in the hive as possible, and place these colonies in a warm repository, and keep up the temperature to 45°, and you will never lose your bees during winter, with any length of confinement we ever experience in latitudes where bees are kept.

Having believed this three years, I have been at work developing a system of management by which we can get nearly all our honey stored in the surplus receptacles, bringing our brood-chamber out in fall almost entirely destitute of honey, and with very little bee-bread. I have succeeded to my satisfaction, and proven the system's advantages as regards increase of profit, and decrease of labor, in all directions, and will delineate it to your readers at a future time. It is very pleasant to be able to dictate an improved and cheaper kind of winter stores, without the troublesome, perplexing, and, in many instances, dangerous job of late extraction.

JAMES HEDDON.

Dowagiac, Mich., April 3, 1885.

MR. J. F. FLORY'S SECTION CORNER-CLAMP.

HIS REPLY TO THE QUERIES ON PP. 110 AND 162.

IN answer to your queries on pages 100 and 162, as to how I close up the ends of my corner clamped sectional honey-boxes, I will say that I am not yet satisfied *what* plan is best—to put wood in the end as you suggest, or tin, cut about $\frac{1}{2}$ an inch narrower than they are high, and $\frac{3}{4}$ inch longer than they are wide, and then bend it so it will fit close over the outside of the section, and then slip it under the clamps, which will hold it tight up to the section without nailing, or else have your clamped sections about $\frac{1}{2}$ inch shorter than your cap, and put a thin board $\frac{1}{8}$ or 3-16 thick between them and the cap. Some will use them just as they do the Tulare sectional box; viz., have them fit up snug to the side of the cap; but I object to that plan, for the simple reason that, if bits of comb are attached to the cap, in lifting them out or in lifting the cap off first, leaving the honey sitting on the hive, which is the better plan, it will bruise the outside of the comb; but by having a thin board between the cap and honey, and lifting the cap off first, these boards can be laid back, and then there will be no bruising of the honey whatever. This, of the three plans mentioned, I am inclined to think will be the best plan.

You still seem to think that I must have a *double* bee-space in tiering up. If the clamps, as you admit, are only $\frac{1}{8}$ inch thick, and you put one on top of the other, you certainly have but one space, and that just double the thickness of the clamps, making it $\frac{1}{4}$ inch, hence we can have but one space between *each tier*, no matter how many tiers you may have; while the Heddon has two and a honey-board besides.

At our last convention at Hanford, March 4, there was but one objection urged against them; and his idea was, that the bees would wax and glue between the sections. As to the wax, I have no fears whatever; but how much, if any, they will glue it I can not say, but certainly not more than the Heddon case. I am not manufacturing them, neither have I them for sale; but if any one will send me

several stamps, for postage, etc., I will mail him a sample.

J. F. FLORY.

Lemore, Tulare Co., Cal.

SWEET CORN AS A HONEY-PLANT,

ALSO SOME OF ITS OTHER—"ADVANTAGES."

A GOOD many seeds are sold, and a good deal of time and money is spent in raising plants that yield honey and nothing else. Well, dear friends, I have many times told you that I felt a little anxious when you sent for seeds producing plants that promise no return except the honey they may furnish. But if you should plant our best varieties of sweet corn, and give it a good cultivation, I should not worry about you one bit. You know we have advertised four different kinds of corn for some years past. Well, it just occurred to me this spring that perhaps I had better see if any of these old kinds had been superseded. Below is friend Kendel's reply in regard to the matter, and I thought it too bad to keep it all to myself. If you want any of the seeds he mentions in his article, he will give you the real genuine at the lowest market price; or, if more convenient, you can send the order directly to us, and we will send the things with your goods.

Mr. A. I. Root: In reply to yours of April 2, we would say we have a decided improvement over Minnesota in Ford's Early Sweet, which is nearly a week earlier, larger, and somewhat sweeter, with price same as Minnesota. For a second early, the Moore's Concord holds its own; the Crosby's is sometimes thought to be a little sweeter, but is not so fine and large an ear, so that the Concord takes the lead for market purposes. For the third, Early Mammoth has no peer; it is sweet, productive, large ear, and continues a long time in the milk. For a fourth, the Stowell Evergreen or the Egyptian are favorites, the Evergreens for evaporating; but for excellence of flavor, the Egyptian. The Evergreen is so well known it needs no description; the Egyptian is 12 to 14 rowed, fair sized ear, not quite as large as evergreen, but has a pleasant habit of producing two or three ears to the stalk when not planted too close.

You can not urge the friends too strongly to plant corn of the four different seasons all at one planting, which is preferable to successive plantings for the following reasons:

1. The work of planting is all done at the proper time, and one can put his mind at perfect rest on the sweet-corn question.
2. The first and second early are not quite as desirable varieties as the third and fourth varieties; but if the former are not planted, no corn can be picked for the table until the third early "Mammoth" comes, and the ground can all be cleared of stalks, and other crops planted upon the earlier patches.
3. After the Mammoth has been all used whilst just right, the later varieties will just begin to be good, and will continue so until frost.
4. The stalks being of half the value of the crop, are more apt to be cut when green, and in their best condition for fodder; for when one knows there are no more ears to be gathered upon a cer-

tain patch there is no reluctance whatever in making a clean sweep of the stalks at once.

Another important matter we must mention, not generally understood or thought of. Instead of planting long rows, plant each variety as compactly together as possible, that it may fertilize its own ears more perfectly.

The earliest may be planted in hills 3 x 3, or in drills 3 feet by one in the row, the second $3\frac{1}{2} \times 3\frac{1}{2}$, and the Mammoth and later varieties, 4 x 4, or in rows 4 ft. apart and 1 ft. in the rows.

About peas, we would say there has not been as much improvement, with the exception of American Wonder, for first-early; but these, although a very nice pea, are really only a few days earlier than Gems, but no better in quality. There is also a new dwarf, Stratagem, to take the place of Champion as third, which requires no brushing, growing only $2\frac{1}{4}$ ft. How the quality will compare with Champions, this season's experience will determine.

You can not do better than plant all at one time. American Wonder or Little Gems for the first, Advancers for second, Champion or Stratagem for third, and Yorkshire Hero for fourth. When Stratagem are used, no sticks or brush will be required for any, and they will follow each other in regular and happy succession, giving you the very choicest peas in their very prime, from the beginning of the season to its close. All we have said about corn will apply with equal force to planting peas in this manner; even the use of the vines in their green state as fodder is a small item worth saving.

The price of corn and peas is lower this season.

Cleveland, O., April 3, 1885.

A. C. KENDEL.

REPORTS DISCOURAGING.

WHAT IS TO BE DONE IN REGARD TO THE FEARFUL LOSSES OF BEES, ETC.?

I NOTICE in an old number of GLEANINGS your advice is to pay more attention to the department called Blasted Hopes, so as to keep fresh in the minds of the novices the uncertainty of bee-keeping. Well, I suppose this is good advice, but it is wholly unnecessary just now, in this vicinity. We have some of us realized it to be a fact, that bees are sometimes an uncertain quantity. Our empty hives and moldy combs are unanswerable arguments to prove that bees will die sometimes; and a glance around our apiaries demonstrates more forcibly the "uncertainty" of the business than whole volumes of advice. Well, nearly 75% of the bees in a radius of 5 or 6 miles have succumbed to the inevitable this winter. Bee-keeping has been "put back 20 years" by the recent cold winter, so "they" tell us, but we don't believe any such thing. One or two good seasons will repair the losses, and it will "boom" again. By the way, we should like to hear from other neighborhoods and localities, in reference to the losses.

Economy, Ind., March, 24, 1885. G. W. WILLIAMS.

Thank you, friend W., for your kind words. There is one thing we should not overlook in regard to these losses. It is going to open up a trade during the year 1885 in bees and queens, never heretofore known; and our friends in the South will probably have a brisk demand at good prices for every thing in the shape of bees by the pound, in nuclei,

full colonies, and for queens of every shade and color. What is our loss will be their gain. Again, the successful ones who have learned by experience and hard work how to winter their bees safely will this year reap the harvest they deserve. It reminds me of what friend Terry says in the new potato-book. A neighbor of his prepared half of his potato-field just as he knew it ought to be, then he got behind with his work, and short of help, and he fixed the field in the usual way. The result showed that he would have made money to have paid five or even ten dollars a day for sufficient help to have *the work done right*; and this was at a time when plenty of excellent men could have been had for \$1.50 per day. Neighbor H. was in just that predicament last fall. He was building, and neglected his bees, and the loss by this neglect will run up into the hundreds of dollars. We employed a careful hand to care for ours, and he had all the time and help he wanted, and all the granulated sugar he needed, and now we have booming colonies to meet the demand that has come for bees by the pound already.

REPORT FROM INDIANA, ETC.

We put up for winter about 10 colonies in single-walled hives, chaff division-boards on sides, and chaff cushions on top; left on summer stands. Fed $3\frac{1}{2}$ bbls. of sugar late in fall. Considerable remained uncapped. Colonies alive now, 30. That begins to look a little like "progressive bee-keeping." How are yours, friend Root? I have noticed closely for your report, to see how that young man succeeded you told about last fall. The past winter has been the closest I ever knew here. Bees flew but little for nearly 3 months. FRED F. ROE.

Jordan, Ind., March 24, 1885.

See April 1st number, page 248.

ONLY 2 WEAK ONES LEFT OUT OF 65.

I have lost 31 colonies out of 51, and a neighbor of mine saved 2 weak ones out of 65 colonies; and as far as I can hear they have wintered poorly.

A. WORTMAN.

Seafield, White Co., Ind., March 2, 1885.

ONLY 16 LEFT OUT OF 96, AND CHAFF-PACKED.

Bee-keepers in this vicinity are wearing very long faces just now, and, indeed, there is every reason to feel blue. Small bee-keepers have generally lost all. An idea may be arrived at from neighbor Dickenson's report, 16 left out of 96, chaff-packed on summer stands. I can not give an account of my own at present, but know my loss to be heavy.

J. L. COLE.

Carlton Center, Barry Co., Mich., Mar. 27, 1885.

LOSSES IN INDIANA.

I estimate the number of colonies of bees within $2\frac{1}{2}$ miles, fall count, 175; spring, 75. My own, fall, 23; spring, 20. Thanks for the teachings of the A. B. C. Beyond the above limits there are Reynolds Bros., of Williamsburg, our supply-dealers, who have had very little loss; number of colonies kept, about 60. Mr. Replogel, near Hagerstown, one of the most experienced bee-keepers in the county, lost 12 out of about 90; his are in chaff hives. The heaviest losses were where the extractor was used.

A. G. MENDENHALL.

Economy, Ind., March 25, 1885.

RECENT DEVELOPMENTS,

And Suggestions and Queries Particularly Pertaining to the Season.

HEDDON'S HONEY-BOARD.

HOW wide are the slats, and how far apart, in Heddon's sink honey-board? also the thickness and width of the side-pieces and end-bars? Does friend H. use enamel cloth, or its equivalent, above the bees?

North Freedom, Wis.

F. MINNICH.

The slats are one inch wide, friend M. There are 9 of them in all. The outside ones are tight up against the side-strips, and the others are on an average about $\frac{3}{4}$ inch apart; yet in the sample sent us the spaces vary from a little more than $\frac{1}{4}$ inch to a full $\frac{1}{2}$ inch, so I presume the space is not very important. The end and side pieces are $\frac{3}{4}$ thick; the end-pieces are $\frac{1}{4}$ wide in the clear, and the side-pieces $\frac{1}{2}$ inch wide. In making similar honey-boards for the Simplicity hive, we make the slats also one inch wide, and the spaces $\frac{1}{2}$ inch. To make them space the brood-frames and come out right, the two outside slats are only $\frac{1}{4}$ inch. This is because we do not use the sink honey-board for the Simplicity hive, as explained on page 229. I believe friend Heddon does not use enamel cloth at all, or any equivalent to it. The cover to the hive is all the covering he has over the frames or over the sections. I should like to look through his apiary, and see if he or his students do not smash hundreds of bees when they place their cover back on the hive in a hurry.

REVERSIBLE WIDE FRAMES.

Have you ever tried reversible wide frames—that is, wide frames with open top-bars, top-bars same width as the bottom, and the tops and bottoms of section boxes, so that the tiering-up plan could be practised with the wide-frame supers? The frames might or might not be made to reverse. Section cases are growing popular recently, and the chief reason for this seems to be that they can be tiered up, while close-top wide frames can not. If separators are to be used, wide frames are best adapted for this purpose. If nice thick tablets of honey are desired, separators *must* be used. E. E. EWING.

Rowlandville, Md.

Your remarks are good, friend E. The reason why we do not often wish to tier up wide frames is because a complete set holding 58 sections usually give all the room any colony wants at one time. Where we want nice thick cakes of honey, I agree with you that separators must be used. In using wide frames in the house apiary, I thought of setting them in upside down. To do this we should have to have narrow top-bars such as you describe. Projecting ends might be full width. If they were reversed, omit the supporting-arms entirely, and rest the frame on a quarter-inch strip of wood placed on the brood-frames at each end of the hive.

ONE WAY THAT QUEENS ARE LOST.

That queens which fail to return from their bridal trips are generally eaten by birds, or fall into the water, is well known; but that some of them are injured by the entanglement with the drone,

the following would prove: The second year I kept bees I had a large after-swarm; when in the hive two days I watched to see the queen come out (as boys and beginners of all kinds do). I succeeded in seeing her go, when I was called away. In about $\frac{3}{4}$ of an hour, when I came back, the queen had not returned, as the bees were all around the hive, and ready to go some distance to the next colony, which stood on the same floor in a second story over a shop. My brother, who had a mated queen in one of his nucleus colonies, offered the same to me to repair my loss, and we were about to drum the queen out, which was in a small straw hive, as were all our bees at that time. When I went to get something, I passed by the front of the shop, and there I noticed, among the usual number of crippled bees on the ground, a queen hopping around right below the entrance of my queenless hive. She had both wings torn at the ends, and one considerably. I realized the situation, and carried her to the hive at once, when all the bees went in, and happiness was restored. She turned out to be a first-rate queen. We could not but think that the queen had pulled toward home, and separated from the drone in front of her hive, where she fell. I have often thought about the occurrence since, considering all the surrounding circumstances carefully, but could not come to any other than the above conclusion.

Philadelphia, Mar. 9, 1885.

C. H. LUTGENS.

Friend L., I would suggest that your queen got her wings torn by making a mistake, and trying to go into the wrong hive. In such cases the bees will ball and bite them until they present just the appearance you mention. Wasn't that the case?

THE OUTLOOK FOR BEE-KEEPERS.

In view of present prices, has honey and the bee-keeping business any future? How about the survival of the fittest? How about Mr. G. M. Doolittle's estimates; viz., 9 cts. per lb. for extracted and 14 cts. for comb honey? I'd "sorter" like to know, you know. For if any one can produce a good article of extracted honey at low figures, I can! That's one comfort.

CHAS. WATERHOUSE.

Bayou Chene, La., March 23, 1885.

Friend W., you will have to read what Prof. Cook says in his article in our issue of April 1, about the plum-grower, that said the curculio was his best friend, you know. The survival of the fittest is a kind of hard doctrine, but we have to meet it at almost every turn. The parable of the ten virgins strikes right on that point. If our things won't sell, there is one consolation—with the improvements we have, and the recent advances made, we can get a piece of ground and raise enough to live on; and if our products won't sell for money, we will just settle down and be happy without any. I am glad to see you take "comfort," and I guess your ground is good and solid.

A HIVE WITHOUT VENTILATION EITHER UPWARD OR DOWNWARD, AND HOW IT TURNED OUT.

On Nov. 23 I left my home and my bees—70 stocks—four miles distant from the Capitol, to reside in Washington during the winter. I saw no more of my bees until March 6, when I went out home and made an examination of them. I found 10 stocks dead, all late swarms which had not had sufficient honey to winter. In passing on from one hive to another, I noticed one which excited my curiosity.

It was one of your Simplicity hives, which by some accidental oversight in the fall I had placed squarely on the bottom-board, so as to leave absolutely no ventilation. Were they living or suffocated? I first "hefted" it by lifting it bodily, bottom-board and all. Pretty weighty. Then I lifted the hive from the bottom-board, and out the bees rushed *instantly* by hundreds from their confinement of three and a quarter months—the liveliest lot in the whole apiary! This may be a fact of some interest to you in your discussion about "winter ventilation." At any rate, I place it at the service of yourself and your bee-friends. I may add, that the oil-cloth cover was tightly on, on top.

J. K. EDWARDS.

Washington, D. C., March 20, 1885.

Friend E., the above looks a little like a "clinch," but I do not think it is quite, for Simplicity hives as a rule have cracks enough to give about all the ventilation a colony would ordinarily need in winter. But it proves one thing, however, that our fastening bees in their hives is not always detrimental. Accidents of this kind have a great many times demonstrated that bees often do live, in spite of carelessness, and in spite of a kind of treatment (enameled cloth sealed down tight for instance) that our bee-keepers would most of them pronounce "sure death."

THE DISPLAY OF HONEY AT NEW ORLEANS.

I don't think you are doing your subscribers justice by not giving us a report of the honey show at New Orleans. I for one have been waiting patiently for the report. I think it would interest most bee-keepers more than the harangue about the Heddon hive and fixtures that few practical bee-keepers would use. I don't know of what use a bee-journal is if it don't give a report of such fairs as the Orleans show.

LUKE SNOW.

Lamar, Barton Co., Mo., April 1, 1885.

Friend S., although there were a great many fine displays at New Orleans, I do not think among them all was any equal to some we have had at our different fairs. The exhibition at Toronto, for instance, was ahead of any thing I saw at New Orleans. Most of the States made an exhibit of honey as well as other products, and some of them were very fine, but probably not nearly as fine as one singly might have been made had the States all united in getting it up. The exhibits were most of them much like what we have had at our fairs and expositions, and therefore I do not see that it called for any particular comment.

CALIFORNIA HONEY AND EASTERN HONEY.

I have just noticed in GLEANINGS the result of your experiments with the hydrometer on different kinds of honey. You say that the California sage honey is not as thick as the eastern white-clover honey, and that a gallon of the latter will weigh more than a gallon of the former. Now, I think that you are a little "off," somewhere. If I mistake not, you always count your eastern honey at 11 lbs. to the gallon, while our California honey will weigh a little over 12 lbs. to the gallon; that is, a 5-gallon can when full will weigh from 62 to 65 lbs., never less than 60 lbs.

W. W. BLISS.

Duarte, Cal., March 16, 1885.

Friend B., I admit that the California hon-

ey was the thickest, and I expected the hydrometer to rise up higher in it, but it did not do so. The only conclusion I could come to was, that the specimen of clover honey tried alongside of it was remarkably heavy; there were "a good many ounces to the pound," as the saying is. I will make some further tests with the hydrometer, and report.

WHAT TO DO WITH HIVES FULL OF COMBS AND HONEY, WHERE THE BEES HAVE DIED, ETC.

I have been trying to raise bees and make honey several years, but have had bad luck, and get but little honey. Last year and the one before I had over 30 stands and they do not make as much honey as I can eat, and now I have only 16 left. I should like to know how to manage the old hives that have had bees to die in, so when they begin to swarm I can hive them.

JOHN M. ELDRIDGE.

Huntsville, Ala., March 17, 1885.

Friend E., put some more bees into your hives, by all means. You can wait until new swarms come out, and hive them on the empty combs if you choose; but I think a better way would be to divide a strong colony before swarming, and work those empty combs in.

FOUL BROOD WANTED.

I am just in receipt of a letter from Frank Cheshire, of London, Eng., whose investigations in foul brood are well known and valued by the bee fraternity, in which he says: "I shall regard a little piece of comb containing the remains of larvae dead of foul brood as a great acquisition, since it would enable me to determine the identity or otherwise of the bacillus on the two sides of the Atlantic." Will you kindly give this publicity in your valuable journal, so that any brother bee-keeper having foul brood may aid in valuable researches by mailing as requested? His correct address is, Frank Cheshire, Avenue House, Acton, London, England. Any one mailing will be kind enough to pack securely in wadding, inclosed in a wooden box, so that the samples will not be useless when they reach London.

Philadelphia, Mar. 23, 1885.

ARTHUR TODD.

We presume some of our readers will be able to accommodate friend Cheshire. As a rule, however, I object to foul brood being sent around by mail promiscuously; but it may be all right in this case. At one of our conventions, Prof. Cook made the remark that if any professional man wished to make experiments with it he had better go where it was already, instead of having bees shipped to him; but I believe he referred principally to sending an infected colony away for experiment.

DEATH FROM A BEE-STING.

I remember reading in GLEANINGS some time ago what S. A. Dyke said about bee-stings, and I think that his advice to use veils is very good. As a Mr. W. T. Burns, living on West Prairie, Trempealeau Co., while taking the honey from a hive of bees, on the 13th of last August, was stung in one eye, was taken with convulsions, and he died in half an hour. An instance of the kind may not occur again, and then it may—we do not know; and to keep on the safe side is commendable to every one handling bees.

Tomah, Wis., Mar. 20, 1885.

L. S. GRIGGS.

Friend G., this is sad news indeed, and it

may be a good thing for people whose system is very sensitive to stings, to wear veils. I do not believe, however, that I shall wear a veil, unless it is necessary to go out among very angry bees when something usual is going on. I think your caution will have the effect of reminding me not to let a bee get too near my eye. I can pretty nearly always tell when a bee is likely to sting me, and at such times I look out that he does not get a chance. If he is really bent on mischief, I would take time to strike and kill him before going on with my work. I can generally do this by striking him to the ground with my hand, and then putting my foot on him. If you strike a bee down, be sure you keep him down; for if he gets up he will sting you sure. Now, I do not mean because I have said this, that you are to go into an apiary striking and fighting every bee that comes along. Attend to your business, and they will attend to theirs, as a rule. Never stop to strike a bee down as I mentioned, unless it is pretty evident that there is no other way to get along with him. Unless you are an old hand at the business, I do not believe I would advise you to try it, even then.

BEES INTERESTING THE CHILDREN, ETC.

For years I have had such an earnest desire to keep bees, and know something of their wonderful little ways, that my husband, at the last State Fair, purchased me a hive well stocked with bees and honey, from Mr. F. S. Wilder, Barnesville, Ga. Now, if it does not encroach too much on your time, I wish to write you how much pleasure these bees, together with your delightful A B C book, give us. Whenever I open it, every little fellow stands around my knee and listens and laughs as I read aloud to them. Each and all of us have an earnest desire to know you and little Blue Eyes. Do you know any thing of the "dogwood"? Is it a honey or pollen producer? I commenced with one colony, but intend to have a large apiary before I give it up, and wish to know all about bees. My apiary will be exactly like your "Grapevine" apiary.

MRS. R. A. NISBET.

Bloomfield, Georgia.

Dogwood has been spoken of as a honey-plant, but I do not believe it bears very much nectar—at least, the kinds we have around here do not.

WINTERING BEES ON COMBS OF HONEY IN UPPER STORIES, ETC.

I commenced winter with 30 colonies; lost 19. I am not discouraged yet. Last October, when I packed my bees for winter, I left two with the combs in the upper story. They wintered first class. Two-thirds of the bees are lost in this vicinity. I have kept bees for six years, and never lost a swarm by going to the woods. My apiary is within six rods of the woods. I have small trees for them to cluster on. I use the hiving-box, and like it very much; it saves time and trouble. I have the alsike clover, and like it for hay and pasture. I have 8 acres on the ground now.

C. W. POE.

Jones, Mich., March 30, 1885.

CALIFORNIA.

We have had no rain for more than two months, and we are beginning to be solicitous for the future crop. These are usually our rainy months.

Sespe, Cal., March 4, 1885.

R. WILKIN.

TAKING DOWN NOTES.

FRIEND SAVAGE TELLS THE CHILDREN ABOUT WRITING WHAT THEY LEARN.

DEAR BOYS AND GIRLS: We all enjoy reading your letters in GLEANINGS, and seeing the interest you have in bee culture. No doubt many of your communications can not find a place, as there is not nearly room enough for them all. We older boys and girls are sometimes troubled because our scribbings do not appear in print, and we think they are better than yours. But I guess Uncle Amos knows what is best. If you knew him as well as I do you would be sure of that. I'll tell you what we will do. We will have a blank book, and write down all that we do and see done with bees; and by and by, when the big folks are discussing something that they think very important, perhaps we can look over our pages and find something put down, and can give facts and dates that will be instructive, even to those who know a great deal already.

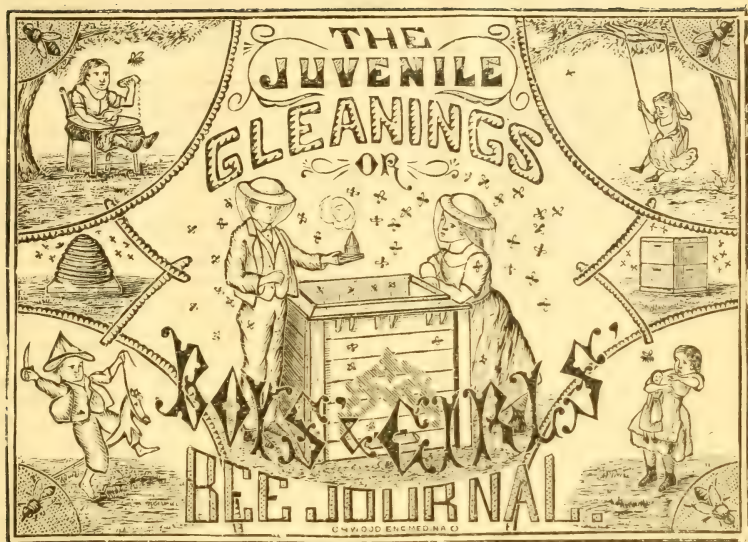
After reading what Mr. Root told the friends at New Orleans about what has been done in bee culture for so many years, I got out some old books in which I used to write down all operations among the bees that I had a hand in, and found many strange things that were not well known at that time, but are now well understood. One book begins 1857, and you will think by that he must be an old boy by this time. Well, he is not bigger than some of you, any way, and often feels "just as young as he used to be." It is very entertaining to read over about those experiments and blunders, and groping in the dark before we had the movable frame and the observatory hive, and many facilities now so common. I think I made some discoveries of things not known, or disbelieved, at that time. I don't think any one had seen a worker-bee laying eggs, and very many denied the possibility of such a thing. Here is an item, Aug. 16, 1864:

"A few drone-cells have been constructed in observatory hive No. 1. In one of these I this day detected a small bee (worker) depositing an egg. On examination, several other cells adjoining and on the opposite side are found to be supplied with eggs, from the same source most likely. I have succeeded in capturing the usurper in the act of depositing an egg—proved to be a worker, being very different from a queen, and by trying to sting when taken. On dissection I found one small egg within. A microscope of sufficient power would no doubt show more numerous proofs of a laying worker."

I did not generally make so long a story unless it was something unusual. To this day I have never seen any account from any one that has seen that process; but now we all know about it, and often to our sorrow. I think there are many things to-day that need your keen eyes to see, and your ready fingers to note down, and you will not have to wait twenty years, and hunt up the fact in an old record book; for now everybody rushes into print, or tries to do it; and if we find out any thing, and can prove it, we may do some good.

By all means have some kind of hive with one comb only, and glass on both sides, so you can see all that is done within—not before it is done, nor after it is done, but while it is doing. But the chief thing that will give value to your observations, both to yourselves and to others, is to write down carefully what you see and do. The great Huber, you know, not only saw but wrote, and his wonderful book was entitled *New Observations on Bees*.

Casky, Ky., March 20, 1885. DANIEL F. SAVAGE.



He that is faithful in that which is least, is faithful also in much.—LUKE 16: 10.

MYSELF AND MY NEIGHBORS.

She hath done what she could. MARK 14: 8.

I OPENED my eyes, and saw daylight just tinging the landscape. Ernest was still sleeping soundly, but we were in New Orleans, and time was precious. Yes, the few hours we had spent there had cost us ~~in~~ cash, perhaps several dollars an hour, and these hours must not be wasted. We were up and dressed while it was yet quite early, and I told him we would go and find a bootblack, and endeavor in other ways to make ourselves presentable before our Southern friends. In front of a barber-shop near by, a pleasant-looking colored boy had established business. His stock in trade was a comfortable easy-chair, with a footstool for his customers while he "made 'em shine." On a peg, at the back of the chair, hung a brush-broom and a good hair clothes-brush. He also had the daily papers for his patrons to read. I did not care to read the papers—I was more anxious to read the boy. He looked thriving and prosperous; and when I complimented him a little, he replied that he had another stand besides this one; and down the street a-piece, across the way, was another colored boy presiding over a similar institution. Before we got through, an old gent came along and proposed to patronize the "branch" shop; but the boy who was hired to take care of it was off looking, or listening to idle gossip. My young friend kept an eye on his apprentice, while he carefully got every bit of the mud out of even the seams of my boots; and when he saw

that he was likely to lose a job by the boy's neglect, he called him to a sense of duty by a peculiar shrill whistle. These two boys, almost of an age, in their conduct plainly showed why one was proprietor and the other simply hired help.

Off at one side was a triangular piece of ground, left by a meeting of two streets, one coming into the other diagonally. This plat had been made into a small park. The park occupied the piece between the two streets, something like the central part of a big letter A. Where the cross-piece is put on the letter A, was a pretty fair-sized two-story brick building, evidently built to give as much room as possible, without much expense. The park contained a fountain, some small tropical trees and flowers, and in the center of it all a piece of statuary in white marble. Whom do you suppose the statuary represented, boys and girls? Some great man, think you? No, it was simply the representation of a pleasant-looking elderly lady sitting in an arm-chair, with her hand laid lovingly on the shoulder of a little girl. I asked my neighbor who was blacking my boots, who the old lady was. By the way, this colored boy was my neighbor, was he not? I do not know why he was not, for he was smart, and diligent in business; in fact, that boy was a model servant to the people. But, more of this further on.

"Why, sir," said he, "that was built after Margaret died. The people of New Orleans raised money and had it made because they loved her. The reason they loved her was because she always loved children so

much. That little girl you see by her side was one of her favorites. She always hunted up the poor children, sir, and finally she was so kind and good to them that the people helped her build that asylum you see." And as he spoke he pointed to the brick building I have mentioned before. Sure enough, there it stood right near the piece of statuary; and across it, in letters dim with time, were words something like these: "Asylum for orphan children."

"I tell you sir," he went on, "you just ought to have seen these streets here at the time the statue was unveiled. There were so many people crowding to get even a sight of it that you could not find a place to stand nor sit down on any of these buildings or in any of the streets. When she died, the people of New Orleans felt awful bad."

I learned from him further, that everybody called her just simply Margaret, and nothing more. I presume, from what he said, that she was not a married woman. Her whole life seemed to have been given to homeless orphan children; and in living for them she was living for the Savior. I gathered from his talk that she was a Christian, and I can readily imagine that when she went home to the Master, her welcome must have been in words something like these:

Come, ye blessed of my Father, inherit the kingdom prepared for you from the foundation of the world: for I was a hungered, and ye gave me meat: I was thirsty, and ye gave me drink: I was a stranger, and ye took me in: naked, and ye clothed me: I was sick, and ye visited me: I was in prison, and ye came unto me.—MATT. 25: 34, 35, 36.

Very likely her reply would have been the following:

Lord, when saw we thee a hungered, and fed thee? or thirsty, and gave thee drink? When saw we thee a stranger, and took thee in? or naked, and clothed thee? Or when saw we thee sick, or in prison, and came unto thee?

For I am sure, from taking a look at that kind motherly face, she never thought, while doing all this little work in building up this asylum for these little ones, that she was doing more than her duty; but I think I may be sure the dear Savior replied to her something like the answer which we see in this fortieth verse.

Verily I say unto you, Inasmuch as ye have done it unto one of the least of these my brethren, ye have done it unto me.

I stepped out of the chair, thinking of this, and rejoicing that I had found traces of the Savior and a Savior's love, right here in the heart of the great city of New Orleans. I told my young friend (yes, by this time he was not only a neighbor but a friend, and I should be glad to see him and grasp his honest hand at any time), that I had got my cloths muddy some, and I wished to get him to brush me up nice, so I should not be ashamed of myself when I rose up to talk to the bee-friends.

"To be sure, sir," he replied, "I always do that." And after he had done his work to my full satisfaction I asked what was to pay. You know, the people of New Orleans have been accused of charging exorbitantly for every thing. Well, I was a little surprised when he said a nickel. He, like Johnny Stout, whom I told you of a while ago, rejoiced in giving humanity "full

value" for all he received. No wonder he had two chairs. Before we took the street-car I glanced again at the beautiful picture in white marble, illumined now by the rising sun, and I thought of Christ's words as he spoke of that other woman, "She hath done what she could."

BLASTED HOPES.

MANY BEES AND FEW HIVES, OR MANY HIVES AND FEW BEES—WHICH?

ONE evening last spring Bro. Phillips came over to ask me if it was not about time for the bees to swarm. I told him that it was time, but that I did not want any more bees, and I was going to run mine without increase, *a la* Heddon, as much as possible.

"Well," said he, "I want mine to swarm; it seems to me that bees do better if they swarm early, and I have a hive down there that is just booming, and I am looking for them to come out every day. Don't you think it would be a good plan to pile straw on the hives and sweat them out?"

"Now, Brother Phillips," said I, "we don't look at bee-keeping from the same standpoint. I run my bees for honey; you run yours for *bees*; you are anxious to have your yard dotted over with little boxes with a few bees in them, while I would have all of mine in one hive if possible, so we must each go our own gate."

In a few days he came up again, and this time he had a smile spread all over his face; his bees had swarmed—swarmed gloriously—three swarms from the same hive, and he rubbed his hands together and chuckled. This was right in the white-clover honey harvest, and my bees were rolling and tumbling over each other to get into the hives with their loads of nectar.

It might have been ten days before I saw Bro. Phillips again, when he said that his bees were doing well; he had nine new swarms, and every thing was humming.

"And how many pounds of honey have you sold?" I asked.

"Oh! not any," he said. "I am not raising honey; I am raising *bees*; and when I get lots enough, I'll put them to raising honey."

Well, he increased his from six to nineteen (I think); then the honey season was over, and it was all the bees could do to live the rest of the time. Last week Sister Phillips was over, and she said their bees were all dead, with plenty of bees and honey in the hives.

This morning as I was driving through town a woman carrying a sleeping baby in her arms stopped me to ask about the bees; hers were all dead but two colonies; had six in the fall; then when I drove up to the grocery, a man hailed me to know how the bees were doing; and he said the bee-keepers along Spoon River that had three and four hundred hives of bees had lost all of them. My friend Ladd, of Ipava, who bought bees of me two years ago, lost all of his, some six or eight colonies (I forget which), and he ought to have lost them, for he never put even so much as a chaff cushion on them, but left them to die. Then when I drove around by the factory, two more men told me of their bee-losses. Friend Hart, of Vermont, Ill., is a scientific bee-keeper. He has his hives in his doorway, and they are painted green and purple and

brown and white, and are very attractive. There they were all winter; but one day we drove by, and not a hive was to be seen. I knew what that sign meant, and although I have not spoken to him about it I know that all his bees are dead.

MAHALA B. CHADDOCK.

Vermont, Ill., March 27, 1885.

A KIND LETTER FROM A YOUNG BEE-KEEPER.

ALSO SOME WISE WORDS IN REGARD TO BEING SICK.

EDITOR GLEANINGS:—I have been studying bee-keeping for three years. During the summer of 1883 I visited the "Home of the Honey-Bees," in company with my father.

We spent a very pleasant day there, and were very kindly treated by the proprietor and his son, who took pains to show us over the factory and grounds. Owing to my occupation, that of railroad station agent, I have not had much time to devote to bees, but have had a few every year since I became interested in them, in order to get practice. Last spring I bought six colonies of a bee-keeper, at \$6.00 each. I let a friend have them on shares, and when they had increased by natural swarming to 18 colonies I sold out, just doubling my money on them.

I have been much helped by the Home Papers. It is my humble opinion, that you are doing a greater work in them than in all the rest; but the bee-work is necessary, in order to gain access to the people, and carry Our Homes to many hungry souls. I loaned GLEANINGS of Jan. 15 to a neighbor. He was so pleased with it he wanted to know if he could get the Home Papers published separately. He did not care any thing about bees, but he liked that number of Our Homes so much he had read it twice. I was especially pleased with the one in GLEANINGS of Feb. 15, under the text, "Fear not, little flock." I fully agree with you, and I am ready to "follow with my coat off."

It seems to me God has surrounded us with innumerable blessings which many do not see, much less take advantage of them. Is there not also another reason than those pointed out by you why so many people, and especially Christian people, fail to get on prosperously? They fail to do their duty in regard to giving of their substance to carry on the Lord's work. Oh if they only knew the blessing that would follow the giving of the tenth of their income to the Lord! Are we not required to give that much? and can we expect to prosper while we wrongfully withhold what belongs to him? He says, "Bring ye all the tithes into the storehouse, that there may be meat, in my house, and prove me now herewith, saith the Lord of hosts, if I will not open you the windows of heaven and pour you out a blessing that there shall not be room enough to receive it."

I should like to give my experience in regard to this matter. A few years ago, both myself and wife had poor health, and were paying out money for doctors' bills and medicine. I was constantly in fear lest I should be thrown out of employment, and poverty seemed to stare me in the face. I had been in the habit of giving more or less at random for gospel purposes, but finally we were led to see that it was our Christian duty to consecrate a tenth of our earnings to the Lord. We began to do so, and this is the result: We were soon led to see that

we should stop paying out money for medicine. God had given us pure air and sunlight, and these, with temperate living, were all the medicine we needed. For over a year we have not used any drugs in our family; our health has become good; we have been prospered in every way. I have saved more in one year's time since we began to give the tenth than in three or four years previously; but better than that, all fear and anxiety regarding our living is gone; we are willing to work; we love to work, and we know our Father will keep his promise. This giving of the tenth is a great incentive to diligence; it is the best cure for discontent and slothfulness that I ever knew of.

HARRY LATHROP.

Browntown, Wis., March 26, 1885.

Why, my young friend, your concluding remarks are a whole sermon in themselves. Saving doctors' bills by lending to the Lord—what a grand thought! And I am just as sure you have got it right, as I am that the air was made for us to breathe.

HAVE AN OBJECT.

Whether therefore ye eat, or drink, or whatsoever ye do, do all to the glory of God.—1. COR. 10:31.

DEAR JUVENILES, do you have an object ahead when you begin to play? Now you know that most people, when they work, have an object; that is, they work to accomplish something. Now, when you commence to play, if you would say to yourself, "I am going to have a good time with my dolly or my dog, now how shall I begin?" don't you think that your play would do you more good, and then you would be learning something besides? May be you can not see what there would be to learn in playing for any especial object. Well, I have seen men, and women too, who would work hard all their lives, and never accomplish much. You see, they had not learned to work to the best advantage for an object, so I want you all to try to work or play so that you can get the most good out of it.

If you do not quite understand me, ask papa or mamma to explain to you what I mean, and don't think, "Oh, I am only playing, and it makes no difference what I do." It does make a difference, if, while playing, you throw things about and leave them so; don't you see you are forming a habit that you may never get over? Now just try to be neat, and teach yourself to put away things you have got through using. You see that you have an object in taking care of them, first, because you will want them again; and second, because a good habit gained is a grand object to attain. Some work or play, as an acquaintance of ours tells a story. He will commence to tell about a certain thing like this: "Mr. Smith was going to harness his horses to go to"—And then he would branch off and tell where he got the horses; what Mr. So and So said, and would go from one thing to another until something would happen so that he would not have time to tell you what Mr. Smith was going to do; and if you were to remind him the next time you saw him of what he had commenced to tell you about Mr. Smith, he would, may be, finish telling what Mr. Smith was going to do, but he would have to tell a great many things first.

Now you see, if you don't look out you may have a good object to work for; but if you don't stick to

that object you will be apt to find that your friends or neighbors will never know what that object is, and your life will be a comparative failure; and no one wants that to happen to them. So, have an object in life, and stick to it.

AUNT KATIE HILTON.



Every boy or girl, under 15 years of age, who writes a letter for this department, CONTAINING SOME VALUABLE FACT, NOT GENERALLY KNOWN, OF BEES OR OTHER MATTERS, will receive one of David Cook's excellent five-cent Sunday-school books. Many of these books contain the same matter that you find in Sunday-school books, costing from \$1.00 to \$1.50. If you have had one or more books, give us the names that we may not send the same twice. We have now in stock six different books, as follows: viz.: *Sheep, Calf, The Giant, The Kid, The Baby Family, Rescued from Egypt, and Ten Nights in a Bar-Room.* We have also *Our Homes, Part I and Our Homes, Part II.* Besides the above books, you may have a photograph of our old house on any, taken a great many years ago. In it is a picture of myself, Blue Eyes, and Caddy, and a glimpse of Ernest. We have also some pretty little colored pictures of birds, fruits, flowers, etc., suitable for framing. You can have your choice of any one of the above pictures or books for every letter that gives us some valuable piece of information.

"A chiel's amang ye takin' notes;
An' faith, he'll prent it."

IT is spring time now, dear children; at least, it is quite springlike here in Medina. The grass is beginning to look green in spots, and, oh my! but you ought to see our strawberries. I told you how I fixed the ground last fall, just as Peter Henderson said we should do it. We first made underdrains three feet or more deep, and then we plowed the ground, and subsoil plowed it. Then it was harrowed fine and soft, and then we drew on so much well-rotted stable manure that the men said they could not get it all dragged in; but I told them to drag it in as well as they could, and then we planted right in this good ground, more than half stable manure (that is, it was on top), those nice potted plants I told you about. The plants took right hold of the manure, and grew like cabbages last fall; and when we covered them up in December they seemed to be growing still, and that was the last I saw of them until yesterday, the 6th of April. I went out and moved the straw away from where I supposed it ought to be, and Huber and I both had a jollification over it. Mamma had to come and look too. The leaves were just a bright shining green, and great crowns were already bursting forth with the promise of much fruit. I did not know any thing could be so nice in the way of strawberries. Some of them were covered up with coarse manure, and these look a little the best of any thing. The melted snow and rains, made the past winter, have covered the plants with a dark-colored liquid; but the beautiful green foliage peeping through the manure just makes

me happy. A part of the plants were left uncovered, by way of experiment; but at the present writing, those mulched with manure or straw are away ahead.

I wonder how many of my little friends are interested in strawberries—*strawberry-plants*, I mean. I know you are all interested in the berries; but I tell you, my little friends, if you really want to enjoy berries, you must learn to help raise and pick them. You can not get a real genuine relish in any other way. Now then, if any of you have have any thing to tell about strawberries, I shall be real glad to see it in *your* letters.

GRACIE'S LETTER.

My papa is a doctor. He keeps bees; he gave me a hive, but mine died this winter, it was so cold. He took a trip to Florida this winter, and I guess is enjoying himself.

GRACIE COULTER, age 7.

Marissa, Ill., March 22, 1885.

ALSIKE-CLOVER SEED FOR ONLY \$4.00 PER BUSHEL.

We can not go to school this winter, so we are learning to work and study at home. Lily is two years old. One day mother was mixing bread when she ran up to it and said, "I'll dig, I'll dig," and put her hands into the soft dough. It made us all laugh. Father had 100 bushels of alsike-clover seed last year. He sold it for less than \$4.00 a bushel. We get lots of honey from the alsike. Father has 5 acres of Bokhara clover for the bees next summer.

Whitby, Ont., Mar. 20, 1885. GERTRUDE A. ORVIS.

Well, Gertrude, that is a pretty big fact that you furnish us in your letter, if there isn't any mistake about it. Why should your father offer for sale seed for \$1.00 per bushel, when the market price almost the world over is from \$8.00 to \$10.00? Was it because the seed was not very clean, or because your Canadian market was so completely overstocked? If it had some of your celebrated *thistle* seed in it, very likely the price was high enough.

SEVEN-YEAR-OLD PHEBE TELLS US HOW VERY COLD IT WAS IN CANADA.

I wash dishes, set table, and help mother cook. When we take Lily out of mischief she gets up by us and says, "Watch, watch, watch." It has been very cold here this winter. One night this week the milk froze on the table near the coal fire.

PHEBE ORVIS, age 7. *Per Gertrude.*

Very good, Phoebe; and your sister Gertrude makes a very fair juvenile amanuensis.

ONLY 17 LEFT OUT OF 42.

My father is visiting Florida; he went past New Orleans, and visited the Exposition, and enjoyed it very much. He visited Brooksville last week, and thought it the most beautiful place he had ever seen. He wanted to see if it was a good bee-country. It was so cold this winter, that out of 42 hives of bees he saved only 17. He gave me a hive, and I made \$4.00 from them. He did not make very much from the honey last year. We have an extractor, and I help him extract the honey every summer.

JANIE COULTER, age 13.

Marissa, Ill., March 23, 1885.

And so, Janie, your father is thinking of going to Florida, where bees do not die in winter, is he? Well, you tell him for me not to be in a great hurry about it, for there are some good things about the frost and snows, even if they do kill our bees.

ROBERT'S REPORT.

We have wintered 11 stands of bees. We have lost 3. We are feeding the rest syrup. As cold as it has been, I have been to school every day. I drive the hay-loader and harrow, and drive the roller.

ROBERT McCURDY, age 11.

Hornby, Ont., March 9, 1885.

BAD NEWS IN REGARD TO THE BEES.

Pa says everybody around here is losing most of their bees this winter. Pa has eight in the cellar; they are all right; he left four on their summer stands; two of these died. Does it disturb bees to have much noise in a room over a cellar? Pa says it doesn't. We saw the eclipse of the sun yesterday; it looked like the new moon.

NELLIE A. A. DICKMAN.

Defiance, Ohio, March 17, 1885.

A JUVENILE REPORT FROM CANADA.

This is the village where the Fenians fought our soldiers in 1866. Ma was a little girl then, but she helped nurse the wounded. We keep bees, and pa got lots of honey last year. I heard pa say he doesn't allow any loafing, but he works them for all they are worth. A good many bees died around here, but ours are all alive so far. We pack our cushions with sawdust. I like to help pa with the bees. I shall be 10 years old next June.

Ridgeway, Ont.

SPERRY DUNN.

SEVEN-OLD LITTLE BERTIE'S LETTER.

Uncle Joseph told me if I would write you a letter you would send me a book. I love to read story-books. I have a large kite, and it is real fun to fly it. I have a large ball of cord for my kite.

BERTIE BRIGGS, ages 8.

AND WHAT HIS SISTER MABEL THINKS ABOUT HIM.

My brother is all "kite." He wants papa to get him some red muslin to cover his kite. We have a cow. Her name is Flossy, and we have nice milk to drink. I am six years old. This is my first letter to any one.

MABEL BRIGGS.

Cornwall on the Hudson, N. Y., March 23, 1885.

A COUPLE OF LETTERS FROM THE REED CHILDREN.

My father put in the cellar 32 swarms of bees, and two of them died. My pa is feeding a few swarms. I got stung on the lip once, and it swelled nearly as thick as my foot, and I had hard work to find my mouth. I like bees pretty well, even if they do sting me once in a while. I have been going to school all winter, and I go to Sabbath school too. We have a nice place to make a carp-pond. Pa said he would get some for us as soon as he can.

CLYDE REED, age 12.

My father keeps bees, and he has lost a great many for the last two years. I have a colt, and his name is Prince. We keep some nice Plymouth-Rock chickens. The snow is two feet deep, and it is still snowing.

CHARLIE REED, age 10.

Orono, Mich., March 1, 1885.

HOW PA UNITED A SWARM OF BEES.

HE TOOK THE QUEEN AND ONE WORKER BEE TO THE QUEEN'S HIVE WHEN HE LET THE QUEEN OUT ON TOP OF THE FRAMES. THE QUEEN WENT DOWN ALL RIGHT BUT THE WORKER BEE FLEW BACK HOME. IN ABOUT A HALF AN HOUR THE BEES CAME OUT AND WENT IN THE HIVE WHERE HE PUT THE QUEEN. PA HAS NOVICES EXTRACTOR. I HAVE 4 BROTHERS AND SISTERS. LITTLE BABY BROTHER HAS BLUE EYES. HE CAN TELL WHERE HIS TOE IS AND WHEN HE

GETS ANY THING WITH A HOLE IN IT HE WILL SAY "TEEK" FOR PEEK. HE IS 15 MONTHS OLD. IF WORTH A BOOK PLEASE SEND TEN NIGHTS IN A BAR ROOM.

DWIGHT FRENCH AGE 10

MILLERS CORNERS, N. Y.

ALVA'S LETTER, AND THE REASON HE WROTE IT.

We have four stands of bees, and two of them died. They had plenty of honey to eat, so we took the honey ourselves and ate it. Last year I went to school for eight months, and missed only half a day. I am writing this letter to earn a book.

Harlem, Ia., March 6, 1885. ALVA GOODING, age 9.

Well, Alva, your concluding sentence is very frank and honest. The book was what you were after, was it? The bees died, and you ate the honey. Well, now, I believe I should have got some more bees and put right on to those combs, instead of doing the way you did.

A HILL DEVICE MADE OF GLASS, IN THE LAKE VIEW ORCHARD APIARY.

I am boarding at Mr. Platt's, and he takes GLEANINGS. He keeps bees too, and his bees make the best honey I ever tasted. He has black bees, hybrids, and Italians.

To make an upper passage for the bees to go over from one frame to another, he makes a frame about $\frac{3}{4}$ of an inch high, and lays on it a pane of glass 9 by 12 inches. At the edges of the ends of the glass are small open spaces for ventilation. He says that most bee-men say that is not the right way, but he finds it is a good plan.

Summer before last I spent my vacation in Kansas, and I found gum-weeds on the prairie. The flower looks something like a small sunflower.

Mr. Platt's apiary is called the Lake View Orchard Apiary.

CHESTER EDMONDS, age 12.

White Plains, N. Y., March 23, 1885.

WINTERING BEES OVER THE KITCHEN.

I am a little boy ten years old. My pa has six stands of bees; he put them up over the kitchen this winter; sometimes they come down in the kitchen, and bother us; do you think that it is a very good place to keep them? My grandpa had 167 stands last fall, but they are pretty nearly all dead. I am at my grandpa's now. I like to stay out in the country.

ELDON S. R. HAYES.

Wilmington, Ohio, March 31, 1885.

Why, Willie, it does not seem to me that it would be a very good place to winter the bees; but if your papa got them out all right, while your grandpa, who did not put them over the kitchen, had them die so badly, the evidence seems to be rather in your favor. I do not think I should want to winter bees anywhere where they would be getting out of their hives in winter.

PAPA'S HOUSEKEEPER.

I take pleasure in writing to you. I have a little sister; her name is Matta. Our mother is dead—been dead ten years. I am papa's housekeeper. I help papa with the bees. I can sew on the machine, I can make shirts and pants, and my dresses, and I can cook. We have had some very cold weather. Pa is planting Irish potatoes to-day, and bedded sweet potatoes also. I raise a great many chickens. We live close to the railroad; the cars, pass on one side of us, the boats on the other side. We live on a nice little farm on Red River. Pa

has got a great many bees; this is a good country for them.

PERLINA MORGAN, age 12.

Boyce, La., Feb. 14, 1885.

Dear me, Perlina! so you are planting potatoes away down there, are you? Do you know, that since reading the proof-sheets of our new potato-book I am just getting wild to plant potatoes?

NAOMI'S DESCRIPTION OF A JUVENILE WINDOW GARDEN.

Grandma takes GLEANINGS, and we like it very much. We have 19 swarms of bees. One day last summer, when papa was away, we had a swarm to hive, and my eldest brother and I took our first lesson. Our bees did well last year. I have three brothers, two older and one younger than myself. They all go to school, and I am taught at home. Mamma has been blind seven years. Grandma and I read GLEANINGS to her, and she enjoys the juvenile letters and Our Homes. I like much to hear about Huber. I think he would like our new way of window gardening. Fill a glass with water, and tie a thin cloth over it, then scatter turnip seed on the cloth, keep the glass full of water, so that the seed will be moist, and you will have a cute little garden.

NAOMI D. RHODES, age 9.

Locust Grove, Va., March 18, 1885.

Thank you, Naomi; and Huber and I are going right to work to make just such a window garden, and when the turnips get up we will report. Pretty good for a nine-year-old little girl.

LENA'S ACCOUNT OF THE WAY HER FATHER PREPARES HIS BEES FOR WINTER.

I live on a farm. My father keeps bees; he has 13 Langstroth hives; he has kept bees since 1867. He sold one year 1200 lbs. of strained honey. He has got a "slinger." He said he was going to get a new one in the summer. Father takes GLEANINGS. I like to read the stories very much. He has a little building he calls his office, where he slings out honey. I will tell you how father keeps bees in the winter. He takes the honey-board off, and in its place he puts a kind of arched rack over the lower story, or breeding apartment; on this rack he covers with woolen carpeting in squares, to cover the bees up warm. He uses 4 or 5 thicknesses; he has tried several other ways, but likes this best of all. He wintered them this way six years. He has used the racks 4 years.

LENA WILCOX, age 12.

Onleyville, R. I., March 27, 1885.

Very good, Lena. So your extracting-house is the "office," is it? I presume that, with such a dignified title as that, the room will always be kept nice and clean. If that is the case, I think such a name is a pretty good thing. I will explain to our readers, that with the above letter Lena sends a very good drawing of her father's wintering-rack. It is a sort of Hill device on a large scale.

WILLIAM'S ACCOUNT OF THE REVIVAL.

While I was at school to-day our folks opened the hives and there was brood in every hive, and young bees in all the hives. They cover the combs of three frames in each hive, and in the hybrid hive that had one drone in October, the drone is still there. We fed them to-day for the first time, with rye flour and thin syrup. They saw the queen that is in the hive belonging to my brother and me.

There has been a glorious revival in this town.

At the Methodist church, 87 joined, all of whom were converted, and about 3 more converted besides. Last Sunday the Friends' church commenced a series of meetings, which have resulted so far in six conversions, and last night three arose for prayers.

WM. M. NORDYKE.

New Vienna, Ohio, March 21, 1885.

Friend William, we have had a glorious revival in our Methodist church too; and the best part of it is, that a number of boys and girls belonging to our factory are among the new converts.—I am glad to know your bees are doing so well.

ALBERT'S REPORT.

My pa and one of our neighbors sent off for a foundation-machine to Mr. Given in April, but we did not get it till the middle of October; but we heard that it was in the Toronto custom-house. The expenses and all together cost us \$73. We have had some very cold weather here during the winter. Last year was not a very good one for bees here. We extracted over 300 lbs. of honey last year.

ALBERT McCURDY, age 13.

Hormby, Ont., March 9, 1885.

But, friend Albert, you did not tell us whether the delay was caused by the manufacturers or by the custom-house officials—perhaps a little of both. It seems to me our friends in Canada, with all their other good qualities, should have enough good feeling for the wants of their fellow-men to notify them when things were lying at the custom-house. We have had some pretty severe trials with the slowness of the makers of the Given press, as well as the Canada custom-houses.

RACHEL'S REPORT; MORE TESTIMONY IN FAVOR OF SUGAR SYRUP.

I have had several circulars addressed to me from bee-keepers, they thinking, as you headed my letter in your journal, "Ray and his Chickens," I was a boy too. We have had a very cold winter; bees that are chaff-packed out of doors have got badly hurt. Pa had nine colonies and five nuclei out of doors, and they are half dead. Pa says there are about twelve in cellar that have dysentery; he says that they are old colonies, and that it is caused by the honey-dew, as those that had white-clover honey and sugar syrup are in very good condition.

RACHEL ADDENBROOKE, age 11.

North Prairie, Wis., March 16, 1885.

We really beg pardon, Rachel; but we would advise you in future to either give your whole name, or make it clear in some way that Ray, in your case at least, is a girl's name. Sometimes mistakes of this kind are a little embarrassing, and we want to avoid them.—I think you are right about it, that it was the honey-dew that killed the bees. Neighbor H. has lost very heavily from this trouble. Last fall, when he was fixing his bees for winter, he found one very weak colony that was clear out of stores, and starving to death. He felt so sorry about it that he gave them two big milk-pans of sugar syrup as fast as they would take it, so as to be sure they would not get that way again. Well, this 2d day of April they are one of the best colonies he has, while great strong ones with natural stores died.

OUR HOMES.

And God called the dry land Earth; and the gathering together of the waters called he Seas; and God saw that it was good.—GEN. 1: 10.

ALl my life I have been deeply interested in any thing pertaining to old Mother Earth; and just as soon as I was old enough I began questioning as to what there was away down in the ground. I looked into the deepest wells I could find, but saw nothing very satisfactory down in their dark depths. Wherever I saw a bank that had caved off, or whenever the road had made a deep cut through a hill. I was deeply interested in seeing what the hill was made of. Once my father pointed to me a large rock partly covered with ground, while we were riding along through the country. How I did use to enjoy those rides with my father! Very likely it was just about as Huber now enjoys walks and rides with me. Dear old father! how it thrills my heart when I think that he loved me (yes, loves me now; am I not right?) in just the way Huber and I love each other. Well, when he told me that this rock, of which we just caught glimpses, was, perhaps, miles and miles long, and miles and miles deep, my little heart was stirred to know more of these great rocks. When excavating and tunneling for railroads, where a passage has to be made through these great masses, it is a great treat to study their structure and their inner composition.

When I got old enough to study geography, one of the first things that took my attention was Mammoth Cave. I was told that there was a place in the world where we could go away down into old Mother Earth, and then I read of the strange things that were told about this wonderful cave, with its little lakes and rivers, and fishes without eyes. In later life I many times thought of that old Mammoth Cave, and sighed to think that may be this life should be passed, and I should never even see that fond dream realized. After deciding to go to New Orleans, however, Mr. Holmes said one day we could stop off at Mammoth Cave if we chose. Now, I did not tell anybody, but it was the truth, that I looked forward with more pleasure to this one feature of my trip, than perhaps all else besides. Mr. Holmes gave me a little circular published by the railroad company, and I studied this a good deal on the way. When we took the sleeper at Cincinnati, a couple of young men got on who told the conductor they wanted to be called in the night, to get off at Mammoth Cave. When I knew we were in the region of the cave I could hardly sleep; and as soon as I caught a glimpse of the gray dawn of morning, my nose was pressed against the window-pane, trying to get a glimpse of the wonderful country that furnishes such a phenomenon of nature. Before I knew it I was abundantly rewarded. I had calculated that, in this cave region, the water, instead of running along the top of the ground, as it does in Ohio, would probably meet fissures in the rocky landscape, and go down into the caverns. Well, I saw a little

rivulet running down the hillside, from the melting snows of spring. Not a great distance from the railroad track it ran into a sort of valley, and gurgled down into a hole, and that was the last of it. I wondered if my eyes had played me a trick in the dim light of morning. But pretty soon another and then another, and finally a pretty good-sized river just came right out of the side of the bank, and traveled on its course, as if that were the way rivers usually do. We were in the cave region, truly. By the time Ernest awoke, these strange sights had disappeared; but on our return trip we came through by daylight, and watched eagerly for them. These "sink-holes," as they call them in Kentucky, are quite frequent, I am told, and in some places they annoy farmers exceedingly, because of the good ground that washes down into the hole, and leaves them nothing but the bare rocks. In a few cases I saw where they had thrown in rails and bushes in trying to stop the water. What a grand opportunity our friends down in Kentucky have for underdraining! But, perhaps, like ourselves, they do not half realize the blessings that surround them.

When we approached Cave City I was almost breathless with excitement. Ernest and I sprang from the train, hurried up to a hotel where a big sign-board announced, in dilapidated letters, that stages ran twice a day to the cave. We were somewhat taken aback, however, when the clerk told us they could not send a team right away, unless they could have seven passengers, and the charge would be \$3.00 each. Before we reached Cave Hotel, however, nine miles away, we thought the trip was worth \$21.00, for much of the time the hubs of the hack-wheels rode on the mud, and it took us three hours and a half to make the nine miles. In answer to my question, the driver admitted that they had, during the past winter, paid out enough money for horses to have almost, if not quite, built a plank road over this space of nine miles. But they are not Yankees, and do not have Yankee grit. Weary, cold, and hungry, we finally pulled through the mud up to the landing at Mammoth-Cave Hotel. The young lady who officiated as clerk said we could not have supper for about an hour and a half; but when I asked her if there was not something we could go and see, to keep us busy and out of mischief, she said that we might go down and look in the mouth of the cave, if we chose; and then, if we were not too tired, we could go and see Green River, and this river communicates with the rivers of the cave, you know. Ernest and I scampered off through the garden like a couple of schoolboys. We went to a gate at the back end, and followed a path down the hill among the rocks. The rocks in the region of Mammoth Cave are not like the rocks here. Instead of being sharp and angular, the most of them look like a piece of ice that has been left standing on the sidewalk a great part of a summer day; that is, the corners of the stones are rounded off, and worn in channels and gutters by the storms and rains. I judge from this that the rock is composed of some material that is soluble in water, and the water had wash-

ed it away. Flutings and carvings, produced by the agency of the water, are sometimes curious and beautiful. The streams, also, have a color to them, sometimes red, sometimes yellow, owing to the rocky matter they hold in solution. This is what gives both color and name to Green River.

Well, after we had followed the well-worn path down quite a piece, we came to what we judged must be the mouth of the cave. It is a great sort of cavern, or opening, in a gorge in a hill-side. A little stream pours down directly over the mouth of the cave, and forms a tiny waterfall; but when the water strikes the bottom it does not run anywhere, but just goes into the rocks out of sight. Nearly one hundred steps, fashioned in the rocks, took us down to the floor of this cavern, and we walked along a sort of shelf, or ledge, until we got out into the darkness. Ernest was ahead, but called back to me that there was an iron door across the opening, and that we could not go any further. Just then I kicked a loose stone, and it went rattling down into a chasm, and I called to him to come out, and be very careful, or we should get into some fearful abyss, to pay for not waiting for the guide and lights.

As we came out of the mouth of the cave we noticed a tombstone. On reading the inscription we found it was the grave of Stephen Bishop, almost the first original guide, and one of the most daring explorers of Mammoth Cave. He spent his life among its strange labyrinths; and when he died he was buried near his old home. Although we had many miles to walk in the cave that night, I told Ernest that I wanted to see Green River; and so, down, down, down, we went, until it seemed as if our pathway would never reach the valley. It did, though, and the sight of the river amply repaid us. A way off through the trees I caught sight of another smaller river coming out of the side of the mountain. I told Ernest I could not think of going home until I had seen that. This river came out of a sort of cave, as it were; and were one in a boat he might sail into the mountain quite a little distance.

When we got back to the hotel we were ready to enjoy an excellent supper, you may be sure. We found the other five of our company sitting by the fire, some of them smoking. How *can* people sit down by the fire, and loaf away time when it is so precious? Here we were at Mammoth Cave, and the expense of getting here had been such that every hour we remained would represent several dollars in cash. It seemed to me almost too bad to take time to eat supper; but after supper I was tempted to feel discouraged when we were told that the party would not be ready to visit the cave before nine or ten o'clock. The bright, intelligent clerk, though, evidently understood her business, and she entertained us during these hours with descriptions of the cave, telling us what route would be the one we had better take, and giving us some of the legends of the place.

I want to digress a little here to point a moral. All through life we meet not only with vexed but disappointed people. Most of

of us, too, meet with opportunities of softening vexation and disappointment, to say nothing of opportunities of banishing it entirely. Most of us are serving our fellow-men in some capacity or other. The traveling public are constantly looking to others for what they need; and it is not only *servants* and *clerks* at hotels, who have it in their power to make people comfortable and happy, but it is almost every one of us. Jesus said, "He that will be greatest among you, let him be your servant." Unfortunately, however, none of us like to be servants; and yet that is just what we are; and the way to be happy is to enjoy being a servant. Sometimes you say, "I am not going to be anybody's servant." Suppose, now, dear friend, you should say, "I am going to be everybody's servant." How would that sound? Well, the proprietors of the hotel at Mammoth Cave had the good luck to secure a clerk, or book-keeper, who seemed to feel that the place whereunto God had called her was in being everybody's servant. She was not called upon to bring wood for the fire, or to put out the horses, it is true; but she "served" by making people feel pleasant, and willing to wait. I thought once her gift was a rare one; but in thinking it over I do not know that it is so very rare after all. There are thousands of young ladies (I know two over at our house) who can make themselves very pleasant and agreeable if they have a mind to try. Perhaps you have seen girls in their teens take pain to make themselves agreeable to certain young men. Did they succeed? May be some of you can remember how well they succeeded. Ask your wife if she remembers any thing about it. Well, now, suppose these same girls should exert themselves just as much to entertain some old lady, or, may be, a fidgetty, notional old man, or perhaps half a dozen boisterous men of the world—business men, for instance—would they succeed? To be sure, they would, if they tried to. I do not know whether this young lady of whom I am speaking was a Christian or not; but I do feel that she honored her Savior in being agreeable and entertaining for three or four hours, to a party of seven who were impatient to visit the cave. Some of this party smoked cigars meanwhile, right in her presence too; but she looked cheerful and happy for all that.

I inquired eagerly how it was that so many people could be found who could go on foot the eight or nine miles we expected to go that night, and not become fatigued. She said the air of the cave seemed to have a wonderfully exhilarating effect on almost every one, and that many people would go the entire long route of 18 miles and not mind it. She herself had traversed it, and felt well enough to attend a ball in the evening afterward. I shall have more to say of this anon.

Daniel Boone was one of the first who assisted in exploring Mammoth Cave. In 1812 quite a business was done in mining saltpeter to supply our people with the materials for making gunpowder during the war of the above date. One of the first explorers was a man named Baker. He wandered in

a short distance by the help of a torch, and told his family, when he got home, of such wonderful sights he saw, that his wife and three children accompanied him back. They became so interested with the rocky formations that they wandered on until he stumbled and dropped his torch. He tried to light it again, but failed, and for two days and two nights they wandered in its awful darkness. Finally his wife sought for the spots made by their damp feet when they came in, and by this means got near enough the entrance so they could see light.

In 1816 the cave was owned by Thomas Moore, but he was ruined by being connected with the Burr and Blemmerhasset conspiracy. At one time a Mr. McLane bought the cave for \$40.00, and 200 acres were thrown in to make him satisfied with his bargain. In 1837 a Mr. C. F. Harvey was lost in the cave for 39 hours. His fright became so great that he lost his mind; and when the guides got track of him he fled from them like a wild animal. He recovered, however, after being among his friends for a time.

One of the romantic features of the cave is, that for more than sixty years people have hunted for some other opening, and many attempts have been made to sink a shaft that should strike some of its subterranean caverns. Stephen Bishop, whose tombstone I have mentioned at the mouth of the cave, once discovered a second opening. He was a slave at the time; but his master, who owned the cave, hearing that he knew of another outlet, questioned him about it. He admitted that he did know of such an entrance. In order to prove it beyond doubt, his master, with old Matt Bransford, the one who was to guide us during our trip, went and placed themselves at the mouth of the cave, sending Stephen in, and locking the iron door, they both keeping watch at the entrance. If he got out without coming through that door, of course they had proof of the other opening. Along in the afternoon he came quietly down the side of the mountain. Now, the other opening might be on some other man's land, and the cave was getting to be valuable property. Said his master,—

"Stephen, if you will give me your promise to carefully close this secret opening you have discovered, so that no one will ever be likely to find it, either on the outside or inside, and then will agree to let the secret of it die with you, I will give you freedom."

Stephen gave the promise; and although he lived many years afterward, the secret was kept locked in his own breast, and he died with it. Our narrator informed us, with a sly twinkle, that he never told even his wife!

There are in the Mammoth Cave, 223 avenues already explored, and the united length of these avenues is equal to 150 miles. The short route takes in eight or nine miles of the most interesting portion; and the long route, which crosses the rivers, and includes a boat-ride on one of them, is about 18 miles. At the time we were there, the rivers were too high to permit of taking the long route.

Pretty soon a horseback messenger informed us that the other party for whom we

were waiting were not a great way off. Old Matt, our guide, trimmed his lamps and prepared for the trip. He was quite talkative, although he was an old man, and seemed quite willing to be plied with questions. The lamps were about the size of a tin cup, set in the center of what looked like a tin plate, and three chains enabled us to carry them conveniently. The tin-plate arrangement was to prevent breaking the lamps by knocking them against the rocks. Each visitor has a lamp and a cane. The time for starting arrived; but, as usual, two or three of the company of eleven were lagging behind. My friend Matt finally pulled a rope and rang a bell that was perched on a post near us. Even then they would not all come without considerable urging. I felt like dancing around the guide, like a schoolboy who is going chestnutting; but I concluded it were better to remember that I was almost an old man, the father of a family, and—editor of GLEANINGS; so I walked soberly, but I was not behind anybody, you may be sure. Here we go, down the gravelly walk, and we are actually before the mouth of old Mammoth Cave. The little waterfall makes a pleasant ringing as it spatters among the rocks. Our party of eleven are in good spirits, and down we go those rocky steps till we stand before the mouth of this great cavern—one of the wonders of the world.

I wanted to run on ahead, but our friend Matt objected. The iron gate across the narrowed-up passageway before us made me think of the wicket-gate in the Pilgrim's Progress. Matt was our interpreter, and I hope we were all Christians. We stood around him while he unlocked the gate and swung it back on its hinges. Just now we began to discover that our guide was to be *boss* during the evening, and we were to be his subjects. He ordered us to hold our lamps before us, and walk straight ahead until he called on us to halt. Somebody ventured to ask what we were to do that for, and he simply replied, "Do as I tell you."

We found out pretty soon, for the breeze that was coming out near the entrance now increased to almost a gale, and it was with difficulty that we kept our lamps from blowing out. This iron gate is about 300 feet from the mouth of the cave. When the guide called on us to halt, we looked around and discovered that the ceiling had raised, and the walls had receded until we were in a large room as it were. All around the sides of the room were bats hanging to the walls and ceiling. Now, Ernest once had bats for a hobby; and for a week or two he questioned everybody he came across, as to whether they knew any thing of these animals that could fly, and yet did not have feathers. His grandpa gave him the most information of anybody, but still he was not half satisfied. I turned to him and told him now was his time to push his investigations. The guide told us they came there to wait for summer.

"Why, Matt," said I, "you do not mean to say these chaps hang here in this way from fall until spring, do you?"

"That is exactly what they do do," said he.

"But, what do they have to eat?"

"They do not eat any thing."

Now, here is a point for friend Clarke in his hibernating theory. The droppings from the bats had accumulated in such quantities that they formed a sort of guano, which had been collected for fertilizing purposes. Some of the boys proposed catching some of them to take home; but the guide told them there would be plenty of time when we came back, and they need not fear but there would be plenty of bats, for, in fact, there were thousands upon thousands. They came in just far enough to be entirely beyond the influence of cold air—perhaps 500 or 600 feet from the mouth. The temperature of the cave now became uniform, and stood at just 55, and it seldom varies one degree from this, winter or summer. Here is a fact for us in wintering bees. Old Mother Earth is 55, and I presume the water from our deep wells is 55, or ought to be. Isn't that where we want it? and if so, can we not get it without any very great trouble?

A little further on we came to the vats and machinery used by the saltpeter makers over 70 years ago; and yet every thing was as perfect as it was the day it was put up. Woodwork never decays or wears out here. We somewhat expected to find dampness; but the floor is covered with dry dust in many places, and in this dry dust you will see footprints made by the barefooted boys of a century ago, it may be. The guide told us to hang up our overcoats on the timbers. Some thought they would rather carry them; but he told us we should not need them, and that we had better follow his instructions. I had been troubled with a cold and sore throat, so that I thought I might be chilly; but I very soon discovered that there was no danger of taking cold in Mammoth Cave. We now began to discover the queer figures on the ceilings and walls, formed by the precipitation of plaster of Paris, or sulphate of lime, formed by the water years ago, when these caverns were water-courses. These salts, as they were precipitated from the water, crystallized in many curious shapes, sometimes resembling frostwork on the window-pane, or alum crystals on the alum baskets that we used to make when children. A great part of Mammoth Cave was originally strewn with pieces of broken rock. These have been piled out of the way, so as to make it convenient for people to pass. Matt rapped with his cane on a log along our pathway, and explained briefly, "Pump-logs of 1812." Our forefathers carried water into the cave by these pump-logs from the little waterfall over the mouth, that I have mentioned. After passing it through the saltpeter dirt, just as we pass the water through a barrel of ashes in soap-making, they carried the saltpeter in solution back to the mouth in another set of pump-logs, making, altogether, more than half a mile of these wooden pipes. When the water came back it was boiled down in kettles as we make sugar.

After our overcoats were off, and we were ready to start on our tramp, the guide gave us some directions in regard to getting lost. Visitors are requested to keep their eye on

the guide, and note carefully his instructions. If one should, however, become so intent on examining some of the curiosities, and forget and let the crowd get out of sight, all he has to do is to keep right where he got lost until his absence is discovered and they come back after him. If he will do this, he will be certain to be rescued inside of ten hours, because the whole route the guide traversed will be gone over in that time, under any circumstances. If, however, he thinks he can manage it himself, and goes to wandering about in the avenues and darkness, it may be impossible to find him for several days. During the route the guide would call out, "Danger on the right!" and again, "Danger on the left!" Whenever these calls came I was always curious (like old mother Eve) to know what it was that was dangerous, and what made it dangerous. Sometimes, by peering off toward the danger I could discover a steep precipice, with rough and ragged rocks away down at the bottom. Sometimes these chasms were fenced off with a railing. Where there was an abundance of room, safety was secured by simply walking far enough away from the brink. The caution was needed, however; for a careless person, amid our talking and laughing and jesting, might stumble, without thinking, into these dangers; for these little lamps that we carried seemed to have little effect in dispelling that darkness for only a few yards ahead.

Did it ever strike you, dear reader, that we all, in living these lives of ours, need a guide to warn us beforehand of danger on the right and danger on the left? Do you remember what I have told you of that little voice within me that calls out, "Lord, help," sometimes before I am scarcely aware that dangerous ground is near? I have thought, too, of the way in which we sometimes try to get ourselves out of trouble without any help from the Guide. A young Christian makes a mistake innocently. He feels ashamed to confess his folly, and, without waiting for the Guide to tell him what to do, he ventures to try a falsehood as a refuge. He gets in trouble and darkness. Instead of standing still and falling on his knees, asking mercy and guidance, he tries more falsehoods, and soon finds that he is blundering hopelessly in a darkness that is even worse than the darkness of Mammoth Cave, and more dangerous and more sure to lead to ruin than any foolish blundering in that cave. In Mammoth Cave they have what they call the Bottomless Pit; and one who blunders alone, without the assistance of an experienced guide, might possibly fall into it; but he who disdains and rejects the help of the Savior shall surely reach, in the end, that *bottomless pit* that many of us have, even yet in these lives, had faint glimpses of. Shall we not, then, dear friends, keep closely to Him who has said,—

I am the light of the world; he that followeth me shall not walk in darkness, but shall have the light of life?

And now, friends, here I am at the end of the fourth page of my story, and yet it is scarcely begun; and therefore I shall have to continue it in our issue for May 15.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,

EDITOR AND PUBLISHER.

MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, APR. 15, 1885.

God resteth the proud, and he saveth grace to the humble. - 1. PETER 5:5.

BUSINESS AT THE PRESENT DATE.

As we are still up with orders, discounts will be the same as on page 248, last issue.

OUR NEW POTATO-BOOK.

WE hope to have this ready to be mailed in about ten days. It seems to me the book must certainly be worth the small price asked for it, to every one who is even *indirectly* interested in the cultivation of the soil. We make this proposal: We will send it by mail postpaid for 40 cts.; and after you have read it through, and you do not say it is worth the money, you may send it back at our expense, and get your 40 cents.

THE CANADIAN BEE-JOURNAL.

THE initial number is at hand, and it certainly gives great promise of much usefulness. Its motto is, "The greatest possible good to the greatest possible number." If friend Jones can keep a weekly bee-journal going, and make each number equal to the one before us, it will, without question, have a wide circulation, even throughout the U. S., and may be some of the brethren may decide to take the *C. B. J.* instead of *GLEANINGS*. Dear me! what a calamity that would be! But if it carries out the spirit of friend Jones's little text, I think I can say amen, and not be troubled either.

HONOR TO WHOM HONOR IS DUE.

MR. JOHN DARR, of Darrrtown, Ohio, sent us a letter Feb. 10, describing a wire reversing device, nearer to our own than any thing else that has appeared; in fact, it was just about it exactly, only he had just one arm for the frame to hang on. I at once decided that it was impracticable, because frames balanced on a single pivot were used and discarded years ago. What I did was to make two arms and a larger hole in the end-bar, so that there were two supports to the device. I should have mentioned this before, but I had forgotten that such a letter had been received till he called my attention to it. He also mailed me a sample device.

MAKING FIGWORT AND SPIDER PLANTS GROW.

ALMOST every spring we have more or less complaints about these seeds, and, to tell the truth, they are a little bit shy about vegetating. We have just discovered, however, that they all come up beautifully, and in a very short space of time, when managed on the plan Peter Henderson gives in his *Garden and Farm Topics*; namely, covering the seeds with sifted moss instead of earth, and then keeping the moss damp by sprinkling on water every day. As soon as the third leaf is well out, the plants should be transplanted an inch or two apart.

Our friend "Lu," the botanist of our office, by request also furnishes me the following:

Take a common flower-pot with a hole in the bottom, and fill with earth as for potting a plant. Sow the seeds in this carefully, cover with earth, and pack down well all around, and water well. Turn over this a glass goblet that will fit tightly in the top of the pot. Fill a saucer with water, set the pot, goblet and all, in it, and place the whole on the reservoir of the kitchen stove. Ours is an old fashioned elevated reservoir. Always keep the saucer full of water, and no matter how hot the stove is, it will be all right. By this method, spiderplant seed will sprout in four days. As soon as you see the earth "humped up" in little heaps you will know that the seeds have started, and should remove the pot to the window and give all the sun possible.

WHAT IS TO BE DONE WHEN THE BEES ARE ALL DEAD?

WHY, put some more bees in the hives, to be sure. At this season of the year, half a pound of bees with a queen put on to combs of honey will make a good colony by July 1, with proper attention. There is a little trouble, however, in getting so small a quantity as half a pound to take care of the eggs the queen will lay, unless the weather is favorable. A little piece of brood to hold the whole together, even though it were no larger than a cookie, would keep the little colony together; and the young bees that would come out of such a piece of brood would come in just the right time to keep the thing going. Now, I do not believe very much in sending off to supply-dealers for half-pounds of bees with hybrid queens to get a start, so long as you can buy bees for any decent kind of a price around home. You may have to send off for queens, because old-style bee-keepers would not have as many queens as you need. But bees and brood can almost always be bought near home. In order to cut the little piece of brood I spoke about, take just such a cookie-cutter as you have to cut out cookies. Take a comb out of your old hive. Cut out a circle. Then with the same cookie-cutter cut a circle out of the brood-comb. Swap the pieces, and you have no mutilated combs to bother. If the cake-cutter does not cut the combs readily, file it sharp, and then roll it around as you make the cut. If your time is limited, it may pay you to buy several packages containing half-pounds of bees, and a cheap queen of some kind. Some years, after bees have died, we have done quite a trade in sending out hybrid queens with half-pounds of bees each; and the friends who bought them, I believe, did nicely with them too. They will cost more during the month of May, but they are worth almost as much again as if bought a month later. If the weather is nice you can get along without any brood; but a little piece, such as I have mentioned, just about such as the bees can cover nicely, will be a great help. I suppose every thing in the shape of a queen, black or hybrid, will be eagerly bought up this season; and it would be a great boon to the friends who have lost, if those further south would put up half-pounds of bees with a cheap queen, at a moderate price. A thousand such packages would be a real blessing now, and I will give the names of reliable men one insertion, free of charge, in our May number, who are prepared to ship promptly, at a low price, just such packages. While there are thousands who have lost all their bees during the past winter, and have nothing but empty hives and empty combs, there are still other thousands who have wintered splendidly, and who would doubtless be glad to divide with the sufferers, at a moderate price. Now, friends, let us help each other. As I am situated I do not well see how I can sell for less than advertised prices; but I hope there are hundreds who will undersell me. What we do sell in the way of queens and bees we expect to have go promptly, and we want to send queens as we have heretofore, the very day the order is received, the season through.

A HINGED ALIGHTING-BOARD.

G. F. HILTON, Fremont, Mich., sends us a sample chaff hive having a good-sized alighting-board

hinged just below the entrance. The hinges keep the alighting-board securely in place, and let it drop down at any convenient angle, while if the hive is ever to be shipped it turns up over the front, so it will not get knocked off, and it is entirely out of the way.

SECOND-HAND CIGAR-BOX PLANER FOR SALE.

We have one of the above planers that has been in use in our factory for two or three years. The price of such a one new is \$70.00. This one is all in good order, with an extra pair of new knives that have never been used. As we have taken it away to give place to a larger one, we will sell it for an even \$45.00.

FRAME-REVERSING DEVICES.

At the present writing, five different individuals claim our reversing device as their own invention. Now, these five different devices are not at all alike; in fact, one would hardly recognize them as being alike in any respect, and mine is certainly like none of them. It seems to me there is a bad spirit getting in right here, and I do not know but a bad spirit is getting into me too. Even the Howes reversing device proves to be over ten years old, as you will see from friend Flory's description in another column. No doubt I have used features in my device, belonging to each one of the five; but, where shall we end, if we go on in this way? that is, each one of us claims to be the original inventor of every thing that uses *even a small portion* of something embodied in our invention.

SENDING US SAMPLES OF BEE-HIVES.

If any of the friends wish us to look at the hives they have made, of course we can not very well object; but I hope when they do, they will pay the express or freight on them clear to Medina. I hope, too, they will not feel hurt if after we have looked it over we send it right back again. Our attic is not big enough to store away bee-hives; and after the experience we have had storing them away in our warehouses because there is a *possibility* that they may be needed some time, we think it much the better way to send them back to the shipper. We are often requested to set them in our apiary, and give them a trial. And now, dear friends, please do not think me uncharitable when I say that, when we have attempted to do something of this kind, it has always proved a *trial*, but in another sense of the word. It is not unlikely there are better hives in use than those in our apiary; but the expense of making changes is so great that we feel as if we would rather take the chances with what we have.

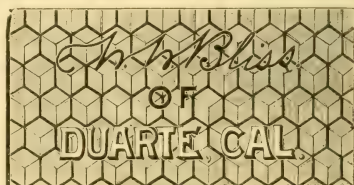
MORE COMPLICATIONS.

In our price list we have for some years advertised a honey-board. A few months ago friend Hutchinson invented a queen-excluding honey-board made of wood. We had honey-boards made of perforated metal before. Right away after, Mr. Heddon said Hutchinson's honey-board was "no good," and so he gave us a real genuine honey-board for an eight-frame hive. That makes four kinds of honey-boards. Well, just as soon as they were illustrated, somebody wanted the same thing made for the Simplicity hive. Others will probably want them made for the American hive, for the Gallup hive, etc. There are four different kinds of honey-boards, and they are wanted for four different kinds of hives. That makes a stock of sixteen kinds of honey-boards that we must have on hand to accom-

modate the brethren. Now, friends, this is entirely out of the question. We will try to keep in stock, for prompt shipment, the four kinds of honey-boards to fit the Simplicity hives or chaff hives (which is the same thing), but I am afraid we shall have to be excused from making these same to fit other kinds of hives. The above gives you a little glimpse of the sea of confusion we shall have in bee culture, if we do not come down to uniform dimensions, and stay there.

A WOMAN'S SEED-CATALOGUE.

We have received a four-page catalogue from Mrs. Jennie Frances Belden, West Branch, Michigan, and Mrs. B. certainly offers seeds reasonably enough. Flower-seeds are 2 cts. per paper; very choice varieties, 4 cts. per paper, and novelties come up to the extravagant sum of 5 cts.; garden-seeds, 4 cts. per packet, and our friend assures us that the varieties she offers are carefully selected from the best known. She says, "My garden is my pride, and I grow no poor plants in it." She pays all postage, but no order is accepted for less than 10 cents. For orders running from three to five dollars, a still further discount is offered. Now, the point that strikes me is this: Why can't a woman do this work? Women, as a general thing, would be more honest than men. Perhaps they could afford to work cheaper because they have no tobacco nor whisky bills to pay, and I really believe that many a woman could make a very nice little business in the way our friend has started out. Of course, the quality of the seeds sent out would determine whether the business would build up or not. She says her seeds were all raised in 1884, and were all tested in December. It has occurred to me many times while working in the greenhouse lately, that a great part of this work is emphatically woman's work. All that is wanted is a woman that loves plants and flowers, and a woman that is willing to work, and wants to make her way. The price list mentioned is nicely arranged, but the printing is very poor. If Mrs. Belden would like to reward us for the good notice we have given her business, I wish she would let us print the next catalogues she needs.



Manufactures a

FIRST-CLASS ARTICLE FOR 15 AND 22¢ PER LB.

WRITE FOR PARTICULARS. 89-11d

WHO WILL BUY? WHO?

80 COLONIES OF ITALIAN BEES for sale by the colony or pound. Simplicity Hives, Frames Langstroth, 9 $\frac{1}{2}$ x 17 $\frac{1}{2}$. Wired frames, combs built from foundation, and are all worker-cells, and straight as boards. The finest lot of bees in the market. Queens and Given foundation for sale. Send for Circular. 5-67-8d

T. H. KLOER,
Terre Haute, Vigo Co., Ind.

DADANT'S FOUNDATION FACTORY. WHOLESALE AND RETAIL. See advertisement in another column.

BEESWAX. MISSOURI.

Made into Given foundation on shares or for cash, on favorable terms. Best machinery, experienced hands. Western bee-keepers, please take notice; save freight or delay, and secure an article as good as any for all purposes.

JOHN BIRD,
Bradford, Chickasaw Co., Iowa.

FOR SALE!

CHOICE SEED CLOVER AND POTATOES.

	By Freight or Express.	mail
	bus' 1	peck lb. lb.
Alsike Clover.....	\$10.00	\$2.75 20c 40c
Hall's early peachblow potatoes.....	125	50 15c 35c
Ontario.....	125	50 15c 35c

Address **E. S. HILDEMAN,**
Ashippun, Dodge Co., Wis.

Please mention this Journal if asked for the above advertisement. 2tfdb

IT IS A SUCCESS.

Rabbits in the apiary will keep the grass and weeds down better than a lawn-mower. Circular free.

A. A. FRADENBURG,
Port Washington, O.

BEECH'S QUEENS

Warranted Italian queens, from Imported mother. May 1st, \$1.00; \$10.00 per doz. Choice selected tested queens, \$3.50. I guarantee safe arrival and satisfaction.

G. L. BEECH,
Box 24, Quitman, Nodaway Co., Mo.

DADANT'S FOUNDATION FACTORY, WHOLESALE and RETAIL.
See advertisement in another column. 3tfdb

MUTH'S
HONEY-EXTRACTOR,
SQUARE GLASS HONEY-JARS,
TIN BUCKETS, BEE-HIVES,
HONEY-SECTIONS, &c., &c.

Apply to **CHAS. F. MUTH, CINCINNATI, O.**
P. S.—Send 10-cent stamp for "Practical Hints to Bee-keepers." 1tfdb

Dunham & Vandervort Foundation

We have bought a large stock of choice yellow beeswax, and can furnish Dunham comb fdn. for brood comb, cut to any size, for 50c per lb.; thin and bright yellow fdn., for sections, at 55c per lb. Extra thin Vandervort fdn., 10 to 12 sq. feet to the lb., for 60c per lb. We guarantee our fdn. to be made of pure beeswax, and not to sag. Will work up wax for 10c per lb. for brood, and 15 and 20c per lb. for sections. To induce our customers to order fdn. early in season, we will allow 10 per cent discount, on all orders received before the first of May.

F. W. HOLMES,
Coopersville, Ottawa Co., Mich.

5tfdb

THE ONLY MANUFACTURERS IN MISSOURI, of Apianian Implements. Send for Circular and Price List of our Hive with the **Reversible** Surplus arrangement for comb honey. Also **Smokers, Comb Foundations, Italian Queens, &c., KENNEDY & LEAHY,**
P. O. Box 11, HIGGINSVILLE, Mo.

5tfdb Lafayette Co., Mo.

IMPORTED CARNIOLANS.

Grades and Prices of Queens: Spring June J. & A. Fall
Finest Selected Queens, each.. \$ 7.00 6.00 \$5.00 \$4.50
Fine Prolific " " 6.00 5.00 4.50 4.00
Reared in Carniola. Safe arrival by mail guaranteed. Same prices for imported Italians. For circular, address MRS. FRANK BENTON, ANGELICA, N. Y. Send greenbacks registered, draft, or postal-order to FRANK BENTON, MUNCH, GER. 3tfdb

BEEES BY THE POUND.

From April 20 to May 24, \$1.00. Dollar queens to go with bees as above, \$1.00 each. After May 20, bees by the pound, 80 cents. 2-frame nuclei, with dollar queen, each \$2.00; 3-frame nuclei, with dollar queen, each, \$2.50; 9-frame in Simplicity body, with dollar queen, each, \$5.00. All wired combs. Wishing to go West, I will sell 200 colonies, after May 20, very cheap. Write for prices, stating what is wanted. Fdn., heavy, 45c. Light, 55c. Cut as desired. Wax worked at 10 cts. per lb. **G. W. GATES,**
5-6-7-8-9d Bartlett, Shelby Co., Tenn.

IF YOU WANT

A GOOD ONE-PIECE SECTION **CHEAP.**

Send to us. Sample and Price List Free.
SMITH & SMITH, KENTON, HARDIN CO., OHIO.
2tfdb

VANDERVORT COMB FOUNDATION MILLS.

Send for samples and reduced price list.
2tfdb JNO. VANDERVORT, Laceyville, Pa.

PRICES REDUCED.

Comb foundation, equal to any in the market, at reduced prices. Send for samples and price list.

J. G. WHITTEN,
6tfdb Genoa, Cayuga Co., N. Y.

BE SURE

To send a postal card for our illustrated catalogue of **APIARIAN** Before purchasing **SUPPLIES** elsewhere. It contains illustrations and descriptions of every thing new and desirable in an apiary.

AT THE LOWEST PRICES.

ITALIAN QUEENS AND BEES.

J. C. SAYLES,
1-12db Hartford, Washington Co., Wis.

VIBRATING TELEPHONE.

Patent Applied For.

Gives splendid satisfaction. No exorbitant rental fees to pay—sold outright and guaranteed to work. Made on line, within 10 minutes, in miles, or many times. **THE COST** for private line, IS LESS than **TWO MONTHS RENTAL FEE** of the expensive **BELL TELEPHONE.** **THE VIBRATING TELEPHONE** is the only **PRACTICAL** and **RELIABLE** non-electric telephone made, and is adapted to give satisfaction, at **any rate.** Agents can make immense profits, earning lines, and get all the work they can do. Territory given Agents in which they are **protected.** No previous experience required. See illustrated instructions, show all about erecting lines. Where I have no agents, Telephones may be ordered direct for private use. Circulars and



price list free. Mention this paper.



6tfdb

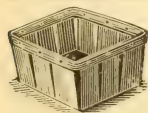
H. T. JOHNSON, 102 S. Division St., Buffalo, N. Y.

Don't Read This

UNLESS YOU

want to buy the best hives and supplies made, for the least money. I have increased my capacity for manufacturing, and have a good stock on hand. Illustrated catalogue free.

H. F. SHADROLT,
Winoski, Sheboygan Co., Wis.



Berry-Packages.

A 32-quart iron-bound crate, with baskets like this cut, for 75 cents. Two styles of quart boxes and crates cheaper still. Send for price list. Also remember that we make the

Sliced One-Piece Sections which took first premium at Michigan State Fair last September. They are smooth inside as well as out—the "best and neatest" sections made. Address

BERLIN FRUIT-BOX CO.,
Berlin Heights, Erie Co., O.

MICHIGAN POULTRY FARM.

W. R. & I. S. PHILLIPS, Proprietors,
BATTLE CREEK, MICH.

Breeders of only pure stock, White and Brown Leghorns, Black Cochins, Langshans, Wyandottes, and Silver-Crested Polish. Prices clear below other breeders for the same quality. Eggs from \$1.50 to \$5.00 per 15. Stock for sale in season. For large orders, write for special discount. No circulars.

PLYMOUTH ROCK. Will send setting of 13 choice Plymouth-Rock eggs for \$1.00, carefully packed.
E. F. WILCOX, La Grange, Ohio.

ALL-IN-ONE-PIECE ÷ BOXES.

4 1/2 x 4 1/2, Per 1000 \$4.25
" 1 1/2 Wide, Per 1000 3.30
Sample, 2 Cents, SEND FOR CIRCULAR.

HIVES CHEAP.

J. P. MCGREGOR, FREELAND, SAG. CO., MICH.

JOB LOT OF WIRE CLOTH

AT GREATLY REDUCED PRICES.

Such a brisk demand has sprung up for this, and our customers seem to be so much pleased with the goods, we have succeeded in getting another still larger lot, of one of the largest manufacturers of wire cloth in the world. Please bear in mind that the only way in which we can afford to sell it at the very low price of 1 1/2 cts. per sq. ft. is by selling the entire piece just as it is put up. We have now in stock the following pieces. As fast as it is sold, each piece is crossed out, and the next issue will show what remains.

SOME OF THE USES TO WHICH THIS WIRE CLOTH CAN BE APPLIED:
This wire cloth is first quality in every respect, and is just the thing for covering doors and windows, to keep out flies, for covering bee-hives and cages for shipping bees; making sieves for sifting seeds, etc.
Number of Square Feet contained in each Roll Respectively.

Inches Width.	No. of Rolls.
8	44 rolls of 57, 60, 50, 50 s. f.
10	33 rolls of 75, 72, 70 s. f.
11 1/2	2 rolls, 80, 65 s. f.
12	3 rolls, 100 s. f. each.
16	4 rolls of 133 s. f. each, 1 of 170
20	3 rolls of 166, 1 of 83 s. f.
22	63 rolls of 181, 1 of 169, 1 of 180, 1 of 230 s. f.
24	20 rolls of 209, 2 of 180, 3 of 120, 4 of 100, 1 of 66 s. f.
26	43 rolls of 217, 18 of 216, 1 of 173, 1 of 109, 4 of 106, 1 of 130, 9 of 108, 4 of 208, 2 of 195, 3 of 151, 1 of 132, 2 of 156, 2 of 215, 1 of 210, 1 of 74 s. f.
28	68 rolls of 223, 7 of 224, 1 of 219, 4 of 186, 1 of 181, 4 of 195, 1 of 280, 2 of 116, 1 of 93, 3 of 93, 1 of 117, 1 of 91, 1 of 164 s. f.
20	25 rolls of 250, 2 of 100, 1 each of 35, 282, 155, 72, 212, 50, 187, 22 s. f.
32	10 rolls of 265, 1 each of 128, 133, 108, 80 s. f.
34	14 rolls of 281, 1 each of 356, 140, 100, 85, 255, 210 s. f.
36	12 rolls of 301, 1 each of 420, 540, 60 s. f.
38	12 rolls of 316, 2 of 285, 3 of 126, 2 of 317, 1 each of 178, 285, 140, 297, 185, 632, 1 of 215 s. f.
40	4 rolls of 168, 1 of 37, 1 of 164 s. f.
42	3 rolls of 193, 1 of 245 s. f.
44	2 rolls of 336, 1 of 318 s. f.
46	1 roll of 132 s. f.
48	11 rolls of 400, 1 of 200 s. f.

A. I. ROOT, Medina, Ohio.

FOR SALE.—Italian and first-class hybrid bees, in Simplicity hives, 10 straight combs, \$9.00 per colony, \$17 per two. J. E. HUNTINGTON,
8d Cotton Hill, Fayette Co., West Va.

DADANT'S FOUNDATION FACTORY, Wholesale and retail. See advertisement in another column. 3btfld

"THE CONQUEROR."

BORODINO, N. Y., Aug. 15, 1882.—All summer long it has been "which and tother" with me and the Cyprian colony of bees I have—but at last I am boss. Bingham's Conqueror Smoker did it. If you want lots of smoke just at the right time, get a Conqueror Smoker of Bingham.

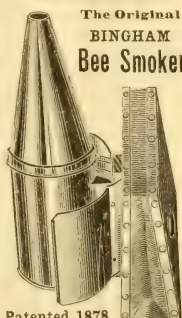
G. M. DOOLITTLE.

BINGHAM & HETHERINGTON
UNCAPPING KNIFE.



PATENTED, MAY 29, 1885.

The Original
BINGHAM
Bee Smoker



Patented, 1878.

Prof. Cook, in his valuable Manual of the Apiculture, states that "Mr. Bingham was the first to improve the old Quinby smoker by establishing a direct draft." Five years of persistent effort has demonstrated that no one but Bingham has been able to

improve a Bingham smoker. Hundreds of Bingham smokers have been in use five years, and are yet in working order. They burn lots of blocks and chips and stuff, and make lots of smoke and comfort, and have no dampers or match-box attachments, as they never go out or fail to blow smoke up or down or sideways, much or little, swift or slow, just as you please, any or all of the time; top up or down, they always go!

Bee-keepers will save money and vexation by buying genuine Bingham smokers and Bingham & Hetherington Uncapping-Knives first. We neither make nor handle any other supplies; but of these we are the original inventors, and only legal makers, and have had over 45,000 in use from one to five years, and receiving but one letter of complaint. With European and American orders already received for over 3000, there is evidence that 1885 with us is not likely to be an idle one. Also that such goods as we make have met the advanced wants of the most advanced bee-keepers in Europe and America.

Prices, by mail, postpaid.

Doctor smoker (wide shield) 3 1/2 inch	.....	\$2 00
Conqueror smoker (wide shield) 3	.....	1 75
Large smoker (wide shield) 2 1/2	.....	1 50
Extra smoker (wide shield) 2	.....	1 25
Plain smoker	.....	1 00
Little Wonder smoker	.....	65
Bingham & Hetherington Honey-Knife, 2-inch	1 1/2	

TO SELL AGAIN, apply for dozen or half-dozen rates. Address

BINGHAM & HETHERINGTON,
ABRONIA, MICH.

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Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they want to dispose of, we will insert notices free of charge, as below. We do this because there is hardly value enough to these queens to pay for advertising them up and keep them in stock, and yet it is oftentimes quite an accommodation to those who can not afford higher priced ones.

QUEENS FOR SALE.—Hybrid queens, 50 cts. each; black queens, 25c. each, from June 1 to Oct. 1. Safe arrival guaranteed. R. H. BAILEY.
7-11db P. O. Box 81, Ainslie Forks, Essex Co., N. Y.

I will sell 20 hybrid queens during May and June at 40c each; will ship them as I can spare them; safe arrival guaranteed.

W. A. SANDERS, Oak Bower, Hart Co., Ga.

I am killing black queens daily. Have 20 of the best ones left. If you want one or more for 25 cts., order quick.

J. P. CONNELL, Hillsboro, Hill Co., Texas.

I have some cheap queens; 3 hybrids at 60c each, and 12 tested Italian queens at \$1.25, the 1st of May. I will also sell some bees, five frames with tested queen, at \$4.50 per colony.

W. A. COMPTON, Lynnville, Giles Co., Tenn.

I have for sale 15 hybrid queens; will sell the best ones at 50c each; second grade at 35c each.

LOUIS WERNER, Edwardsville, Madison Co., Ill.

I can furnish 25 fair to good hybrid queens at 50c each. WM. ST. MARTZ, Martinsville, Ill.

As I will Italianize about 80 colonies during May, June, July, and August, I will sell black queens at 25 cts. Will begin to ship May 20. Also six hybrid queens at 50 cts. each, ready to ship now.

E. W. STAYTON, Martin, Weakly Co., Tenn.

PURE ITALIAN BEES

Full Colonies, Nuclei, and Queens a specialty. If you intend buying bees or queens this season, send for my circular and price list. You will save money by so doing. 7-11db

C. C. VAUGHN, Columbia, Tenn.

SECOND-HAND FOUNDATION MILLS.

We have at present two mills which we have taken toward new ones. The first one is a 9-inch Washburn mill; price, when new, \$30.00 or \$40.00. We will sell the mill for \$12.00. The second one is a 12½-inch mill, such as we used to make for the L. frame. We will sell this for \$18.00. It has a stand so it can be set directly on the floor.

All the above-mentioned mills have been worked over so as to make the new style of cell. Samples of the work will be sent on application. We will allow 5 per cent off from prices mentioned above, for cash with order. A. I. ROOT, MEDINA, OHIO.

Names of responsible parties will be inserted in any of the following departments, at a uniform price of 20 cents each insertion, or \$2.00 per year.

\$1.00 Queens.

Names inserted in this department the first time without charge. After, 20c each insertion, or \$2.00 per year.

Those whose names appear below agree to furnish Italian queens for \$1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen be reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delay as may be unavoidable.

Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with *, use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for \$1.00 before July 1st, or after Nov. If wanted sooner, or later, see rates in price list.

*A. I. Root, Medina, Ohio.

*H. H. Brown, Light Street, Columbia Co., Pa. 7-1f

*Paul L. Viallon, Bayou Goula, La. 7-1f

*S. F. Newman, Newark, Huron Co., O. 7-1f

*Wm. Ballantine, Sago, Musk. Co., O. 7-1f

*D. G. Edmiston, Adrian, Len. Co., Mich. 9-1f

*S. G. Wood, Birmingham, Jeff. Co., Ala. 11-1f

*S. C. Perry, Portland, Ionia Co., Mich. 9-1f

Jas. O. Ensey, Tavistock, Ont., Can. 11-1f

*H. J. Hangeok, Siloam Springs, Benton Co., Ark. 9-1f

*E. T. Lewis, Toledo, Lucas Co., O. 3-1

*C. C. Vaughn, Columbia, Maury Co., Tenn. 9-1f

G. M. Doolittle, Bordinio, Onondaga Co., N. Y. 3-13

D. A. McLeod, Oxford, Butler Co., O. 5-15

S. H. Hutchinson & Son, Claremont, Surry Co., Va. 5-5

*E. Kretschmer, Coburg, Mont. Co., Iowa. 5-1f

*W. A. Compton, Lynnville, Giles Co., Tenn. 5-1f

*J. L. Hyde, Pomfret Landing, Wind. Co., Ct. 7-1f

D. McKenzie, Camp Parapet, Jeff. Parish, La. 7-1f

*J. J. Martin, N. Manchester, Wabash Co., Ind. 7-1f

D. A. Pike, Smithsburg, Wash. Co., Md. 5-1f

Cornelius Bros., LaFayetteville, Dutch. Co., N. Y. 7-1f

Miss A. M. Magee, Cooper's Station, Chilton Co., Ala. 9

*H. C. Simpson, Richburg, Chester Co., S. C. 9

Peter Brckey, Lawrenceburgh, Anderson Co., 9-11-1f Ky.

Hive Manufacturers.

Who agree to make such hives, and at the prices named, as those described on our circular.

A. I. Root, Medina, Ohio.

P. L. Viallon, Bayou Goula, Iberville Par., La. 7-1f

C. W. Costellow, Waterboro, York Co., Me. 21-1f

Kennedy & Leahy, Higginsville, Lafayette Co., Mo. 9-1f

F. A. Snell, Milledgeville, Carroll Co., Ill. 1-13

E. T. Lewis, Toledo, Lucas Co., Ill. 3-1

H. F. Moeller, cor. 5th st. and Western Ave., Davenport, Ia. 3-1

C. P. Bish, Petrolia, Butler Co., Pa. 3-13

Milo S. West, Box 202, Flint, Genesee Co., Mich. 3-13

E. Kretschmer, Coburg, Montgomery Co., Ia. 5-1f

ROOT'S CHAFF HIVES

Still lead, and we furnish them at

Hard-Pan Prices.

Our 5th Annual Circular, containing a full line of Bee-Keepers' goods, will be sent free on application. 5-1f S. C. & J. P. WATTS, MURRAY, CLEARFIELD CO., PA.

HENDERSON'S WHITE-PLUME CELERY, 5c per packet. A. I. ROOT, Medina, O.

AT KANSAS CITY, MO.,

I Raise Pure ITALIAN BEES FOR SALE.

Untested Queens in May \$1 50
 " " June 1 25
 " " after June 1 00

Tested Queens, double the above prices.

Bees, per one-half pound, same prices as untested queens. For discounts, see my circular. *I warrant my untested queens to be purely mated.* If any of the friends who have dealt with me heretofore are not satisfied, I shall be glad to have a full statement of the matter from them, and will do the best that I can to render satisfaction.

5td E. M. HAYHURST, P. O. Box 1131.

1885.

CHOICE ITALIAN BEES AND QUEENS
 From Imported and Selected mothers, and also from the noted **Doolittle** strain of **GOLDEN ITALIANS**. Send for circular.

5-9 **SIMON P. RODDY,**
 Mechanicstown, Frederick Co., Md.



BEE-KEEPERS!

Headquarters for all kinds of Bee-keepers' supplies, such as Hives, Sections, Comb Foundation, Honey Extractors, Bee Smokers, Crates, Honey Buckets, Veils, etc., etc.

Notice Our Prices!

7 lbs. All-in-one-piece Section, \$4.50 per M.
 Comb Foundation, \$5.00 per lb.
 Hives, \$1.00 each.
 Italian Bees and Queens at low figures.
 Send name and address, and we will mail you our latest *Illustrated Catalogue* from
American M'tg Co., New Carlisle, O.

PLYMOUTH ROCKS.

Exclusively bred on a farm, and for business, of the best of strains, regardless of cost of breeding, by 5 years' experience. Not excelled in penciling, scoring, and shipping. Eggs warranted of best vitality in hatching. Satisfaction guaranteed. Price, with packing and shipping, \$2.00 per lb., or \$3.00 for 25. The cost of packing and shipping may be deducted for those who can get them without. Chickens in season. Apply for prices.

9d **J. D. ADAMS, Nira, Wash. Co., Iowa.**

Reduction in the price of Comb Foundation.

Owing to the large quantity of wax thrown on the market by the recent losses, and the general depression in business, we have decided to quote comb foundation, on and after May 1, at the following prices net:

1 to 25 pounds, per pound	47c
25 to 50 " " "	46c
50 to 100 " " "	45c
100 to 500 " " "	44c
500 to 1000 " " "	43c
1000 pounds or more " " "	40c

Packed in neat wooden boxes paper between every two sheets.

If wanted by mail, add 25c per lb. for boxing and postage, on any quantity less than 2 lb.; over 2 lb., add 25c for boxing and postage. 12 x 18 can not be sent safely by mail, in less quantities than a 3-lb. package, and we can not put up less than 1 lb. any size. Now, all of you that will order in our regular-sized sheets, 8 x 10, or 12 by 18, or 8 x 12, may have it for 1c per lb. less. If you will also order it in our regular-sized boxes of 5, 10, or 25 lb., you may deduct 1c more lb. Thus, 1 lb. by mail, regular size will be 20c; 3 lb., \$1.45.

83 (weight or express)	
7 lbs. regular sizes will be	\$1 75
5 " " " " " " "	2 25
10 " " " " " " "	4 50
25 " " " " " " "	11 00

VERY THIN drone or worker 7th, for comb honey, 10c per lb. extra. This we intend to run at least 10 square feet to the pound, and it will be made in strips from 3 to 5 inches wide.

A. I. ROOT, Medina, Ohio.

**BEE-KEEPERS' SUPPLIES,
 BEE-BOOKS, & LE CONTE PEAR-TREES
 FOR SALE.**

One pear-tree sent postpaid for 40 cents.

2td **T. A. GUNN, Tallahoma, Tenn.**

GARWOOD'S

Reversible - Frame Device.

**WILL FIT ANY FRAME,
 IS SIMPLE AND CHEAP;
 ANY ONE CAN MAKE IT.**

**NO NAILS OR SCREWS REQUIRED TO
 FASTEN IT TO THE FRAME.**

Send ten cents for a photograph, with instructions, or 25 cents for a model. Friend Root turned this down as "too much machinery, but quite ingenious." You will smile.

**C. GARWOOD,
 Box 858, Baltimore, Md.**

ITALIAN BEES.

Dollar Queens and Nucleus Swarms specialties, from June 1, to Oct. 1. 500 customers say my strain of Italians surpass every thing. Foundation from clean yellow wax furnished as low as it can be made. Send for Circular to

5-7-9-11-13-15d
W. H. PROCTOR, Fairhaven, Vt.

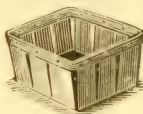
TESTED QUEENS. \$2.00. Untested, \$1.00. 4-frame nucleus, \$3.50 and \$4.50. Mississippi wax-extractor, \$3.00. **OSCAR F. BLEDSOE, Grenada, Miss.** 3td

HEADQUARTERS IN THE WEST FOR

ITALIAN AND CYPRIAN QUEENS.

Tested Cyprian queens from imported mother (Jones's importation), in April, \$5.00; in May, \$4.00; in June and after, \$3.00. Warranted Cyprian queens, in May, \$2.00; in June and after, \$1.50. Italian queens from imported mother Root's importation, after May 15th, \$1.00. I have had experience in breeding queens, and guarantee satisfaction. Order now, and pay when you want queens.

Address **W. McKAY DOUGAN, M. D.,
 5td Seneca, Newton Co., Mo.**



Berry-Packages.

A 32 quart iron-bound crate, with baskets like this cut, for 75 cents. Two styles of quart boxes and crates cheaper still. Send for price list. Also remember that we make the

Sliced One-Piece Sections which took first premium at Michigan State Fair last September. They are smooth inside as well as out—the "best and neatest" sections made. Address

**BERLIN FRUIT-BOX CO.,
 9d Berlin Heights, Erie Co., O.**

WANTED!

ORDERS FOR BEST FOUNDATION.

I use the Given Press; have dies for making sheets of foundation, Langstroth size, or 11x14. Can make 11x12. Wax worked for 10c per lb. I also have a few second-hand L. hives for sale cheap. Send for prices to

**JOHN H. MARTIN,
 9d HARTFORD, WASH. CO., NEW YORK.**

SECTIONS.

Western headquarters for bee-men's supplies. Four-piece sections, and hives of every kind, a specialty. Flory's corner-clamps, etc. Orders for sections and clamps filled in a few hours' notice. Send for sample and prices.

9-20db **M. R. MADARY,
 Box 172, Fresno City, Cal.**

WANTED. 10 to 20 4-lbs. of bees, including hybrid queen in each, if not too far from my locality, so I can come and get them, or have them sent by express, stating price to me.

**H. KINGSBURY,
 9d Lockport, Niagara Co., N. Y.**

HONEY COLUMN.

CITY MARKETS.

CINCINNATI.—*Honey.*—Nothing new has transpired in the market. Demand has improved for good qualities of extracted honey, but the large stock on the market keeps prices low. It brings 50¢ on arrival. Comb honey is of slow sale, and a low price is no inducement to the buyer. Prices nominal. *Beeswax* is in good demand, and arrivals are good. It brings 20¢ to 30¢ on arrival. Chicago takes the cake on adulterations. We had lately several lots of adulterated beeswax offered us from Chicago merchants, which was hard to tell from the genuine.

CHAS. F. MUTH.

S. E. Cor. Freeman and Central Avenues.
April 23, 1885. Cincinnati, Ohio.

NEW YORK.—*Honey.*—These is no notable change in the honey market since our last. The demand for both comb and extracted is very limited, only small lots being disposed of at low figures. We make no change in our quotations. *Beeswax* is holding its price. We quote prime yellow Southern at 33¢ to 34¢ per lb. THURBER, WHYTELAND & CO.
April 13, 1885. Reade and Hudson Sts., New York.

ST. LOUIS.—*Honey.*—Our honey market continues very dull. Extracted in bbls. hard to sell. Last sales at 4¢ for Southern. Stock large. Comb honey. White clover, single case, 1-lb. sections, 16¢, in good order. Cases having broken combs, less. Dark comb not salable. *Beeswax* in fair demand at 28¢ to 31¢; not much arriving, stock small.

W. T. ANDERSON & CO.

104 N. Third St., St. Louis, Mo.

CLEVELAND.—*Honey.*—There is a little better trade in honey; we sold some first-class 1-lb. sections the past week at 13½¢ to 14¢; there is no better sale for second quality, which we hold at 12¢ to 13¢. Extracted, no sale at all. *Beeswax*, 28¢ to 30¢.

April 20, 1885. A. C. KENDEL.

115 Ontario St., Cleveland, O.

KANSAS CITY.—*Honey.*—There are a good many scattering lots of honey coming in from sources which were thought to be exhausted of their supplies long ago; and while the demand continues to improve, yet prices rule entirely in buyers' favor. Choice stock 1-lb. sections, 13¢ to 14¢; 2-lb., 12¢ to 13¢. Extracted, 50¢ to 75¢.

CLEMONS, CLOON & CO.

April 27, 1885. Kansas City, Mo.

MILWAUKEE.—*Honey.*—Clover and basswood honey in comb, quotable at 12¢ to 13¢. Dark, 10¢ to 11¢. Strained and extracted, 1½¢ to 8¢. *Beeswax*, 30¢ to 35¢. Demand light, and trade dull.

April 20, 1885. A. V. BISHOP.

142 West Water St., Milwaukee, Wis.

DETROIT.—*Honey.*—Stock of honey on hand rather low, and demand only fair. Price 12¢ to 14¢.

April 21, 1885. A. B. WEED, Detroit, Mich.

BOSTON.—*Honey.*—There is no change in our market. Honey sells slow now on account of maple sugar and syrup. BLAKE & RIPLEY.
April 13, 1885. 57 Chatham St., Boston, Mass.

FOR SALE.—Four barrels of honey-dew in new iron-bound barrels and half-barrels, for which I will take 4 cts. per lb. JOHN F. DIPMAN, Fremont, O.

I WANT TO SELL OUT.

I HAVE for sale about 40 Simplicity hives, 1½ story non-movable bottoms, painted with two coats of white lead one year ago. They have metal rabbets and metal-cornered frames (upper corners only). Frames are full of good combs, and probably more than half full of honey; 30 racks (mostly home-made) for holding 28 sections; 90 wide frames full of boxes and starters, with tin separators. How much am I offered for the lot on cars—cash?

GEO. H. PATCH, STEVENS POINT, WIS.

FOUNDATION.—Who wants it for 40 cts. per lb.? 200 lbs. in the lot, ready made, and will be cut to fit any frame. T. S. Hall, Kirby's Creek, Ala. 9-101

Where Can I Get 40 or 50 Nuclei of Italians the Cheapest?
EASTGATE HUMPHREY, Rodney, Elgin Co., Ont., Can.

HELP FOR THE SUFFERERS.

The following friends have agreed to furnish bees and queens at low prices, for the benefit of the friends who have lost badly during the past severe winter. In consideration of this, they are allowed to give the following notices once free of charge. As will be noticed, the prices are more or less lower than our regular advertised rates.

BEES BY THE POUND.

200 Colonies to draw from. Safe arrival guaranteed. Send for circular before purchasing elsewhere.

T. P. ANDREWS,

Farina, Fayette Co., Illinois.

In June and July, at \$1.00 per lb., 10 lbs., 90¢ per lb.; 20 lbs. or more, 80¢ per lb. Queens to go with them, \$1.00 Nuclei, as per A. G. ad. Orders filled in the order received. J. H. REED.

ORLEANS, ORANGE CO., IND.

We are now ready to supply bees by the pound; also a limited number of queens. We have never had a case of foul brood or any other bee disease in this region; and for "get up and dust," early and late; and 100 lbs. of honey to the colony, we say our strain of bees can't be beat. Those wanting bees from us can correspond.

J. C. & D. H. TWEEDEY, SMITHFIELD, OHIO.

During the months of May and June I will sell Black Bees by the lb. at 75¢. ½-lb. 50¢. Black Queens with same 25¢. as long as they last, or will mail Black Queens for 35¢. Safe arrival and satisfaction guaranteed. MRS. J. ATCHLEY, LAMPASAS, TEX.

I will sell dollar Queens with a pound of bees with each queen for \$1.50. JOS BYRNE, BATON ROUGE, LA.

After May 15, I will supply ½-pound lots of bees for \$1.00. JOHN H. MARTIN, HARTFORD, N. Y.

We will sell as follows: ½ pound bees, \$1.00. Untested queens, \$1.00. Tested, \$2.00. The above queens are reared from imported mothers, and the bees will all be young Italians.

DIXON & DILLON, PARRISH, ILLS.

We are prepared to ship promptly by Am. Ex. Co., ½ lb. hybrid bees with good hybrid queen in wire cage, at \$1.50; 1 lb., and queen, \$2.00; ½ lb. black bees with good black queen, at \$1.25. Hybrid queens, 50 cts. Black queens, 25 cts. Sent by mail in a Peet introducing cage. Safe arrival guaranteed. None to sell after May.

HEMPHILL & GOODMAN, ELSEBERRY, LINCOLN CO., MO.

We will furnish ½ lb. bees and untested Italian queen, for \$9 in ½ doz. lots, or \$1.50 each, by express Wells, Fargo & Co. from New Iberia, La. J. W. E. SHAW & CO., LOREAUVILLE, IBERIA PARISH, LA.

After June 1st, hybrid swarms at \$2.00. May have some as early as May 15th.

E. BURREE, VINCENNES, KNOX CO., IND.

I have 200 nucleus colonies of hybrid bees on L. frames. We will sell at \$2.25 each, on 2-frame; \$3.00 for 3-frame. Ready to ship at once. Strong in bees. First come, first served. Bees are at express office now. T. S. HALL, Baldwin, Miss.

½ lb. bees and queen, black, \$1.00; 1 lb. do., \$1.25; ½ lb. bees and queen, hybrid, \$1.25; 1 lb. do., \$1.50. Queens only, mailed at 30 and 60 c. Stamps accepted, and safe arrival guaranteed. J. M. JENKINS.

Elmore, Elmore Co., Ala.

I can spare a few pounds of bees, and as many queens as any of the brethren may want. I will sell bees at \$1.00 a pound, and queens at \$1.00.

S. G. WOOD, BIRMINGHAM, ALABAMA.



Vol. XIII.

MAY 1, 1885.

No. 9.

TERMS: \$1.00 PER ANNUM, IN ADVANCE.
2 Copies for \$1.99; 3 for \$2.75; 5 for \$4.00.
10 or more, 75 cts. each. Single Number,
10 cts. Additions to clubs may be made
at club rates. Above are all to be sent
to ONE POSTOFFICE.

Established in 1873.

Published Semi-Monthly by

A. I. ROOT, MEDINA, OHIO.

Clubs to different postoffices, NOT LESS
than 30 cts. each. Sent postpaid, in the
U. S. and Canada. To all other coun-
tries of the Universal Postal Union, Re-
porter extra. To all countries NOT of
the U. P. U., 42c per year extra.

TO TRAP CURCULIO.

PROF. COOK GIVES US A LITTLE TALK ON PLUM
CULTURE.

PROF. A. J. COOK: While reading your excel-
lent article on "The Wintering Problem in
Apiculture," in this month's GLEANINGS, I
thought that, as many bee-keepers are inter-
ested in fruit culture, in asking you to favor
the readers of GLEANINGS with an article on plum
culture, having particular reference to Judge
Romsdel's method of dealing with the curculio, I
would express the wish of many others. Should
you find it convenient to contribute such an article,
there will be one at least who will be greatly obli-
ged to you, and I think many others. If you do not
care to do this, and it is not asking too much, I
should like to have you tell me by letter how to
manage the "little Turk," and I will consider it a
great favor. Respectfully yours, RUFUS PORTER.

Lewistown, Ills., April 15, 1885.

Replying to the above, Prof. Cook says:

Quack methods are often given in our papers. A
few years since, I read in a paper that winding a
cloth about the trees, and saturating it with crude
carbolic acid, would surely keep the "little Turks"
at bay. I tried it; but fortunately on only one tree.
As I visited the tree during the sultry June days,
the whole atmosphere was odorless with the acid,
yet I could see the little weevils thick on the plums
of this tree, plying their mischief, and, as I fancied,
fairly grinning their "you couldn't come it" at me.
But I did succeed in one thing. I killed a valu-
able plum-tree outright. I already knew of a valu-
able and thoroughly effective method, yet was
not content to let well enough alone.

THE JARRING METHOD.

This is the method used by Judge Romsdel, and
has saved the plums in my own little orchard year
after year, so that we and our neighbors had abun-
dant. A sheet of common factory cloth is nailed
to a light convenient frame, and large enough so
that, when spread under the tree, it will catch every
thing that may fall from the tree. I have only four
trees. My sheet is twelve feet square. Along one
edge this sheet is tacked to a strip of light pine,
twelve feet long. The opposite edge is tacked to
two similar strips, each six feet long, the break be-
ing in the middle. From this break the sheet is
slitted to the center. This slit makes it easy to
place the sheet directly under the tree, the center
of the sheet inclosing the trunk of the tree.

In case of large orchards it is found better to
have this sheet carried on wheels, or attached to a
sling, so as to be easily borne on the shoulders. In
place of the wheels or a sling I have two little
children, which, by the way, no family should be
without, by aid of whom the sheet is quickly and
easily manipulated. Besides the sheet, we must
have a strong heavy long-handled mallet. This
may be thickly padded with carpeting—this is the
way mine is fixed—or a limb may be sawed off, or a
spike may be driven into the trunk and main
branches to receive the blow, in which cases the
padding of the mallet should be omitted. What we
desire to do is to give the trunk a sharp blow so
that each limb may be jarred with force, and yet
not injure the tree. Small trees may be jarred by
simply striking the trunks. With large trees each
branch must be jarred.

The time to commence the warfare is just as we
see the little eggy crows falling from the plums.

or when we see the little crescent cuts thus, (•), on the plums. These little curved cuts are made by the little weevils as they lay the eggs in the plums. This fact gives rise to the name "little Turk." For years now I have seen these crescent marks just as the blossoms—calices—were falling from the plums. The jarring should be done very early in the morning, or as late in the evening as we can see well. To avoid the dew, not to speak of early rising, the evening battle is generally preferred at our house. In the middle of the day, especially before the days get warm, the curculio are hid beneath the trees, hence the necessity of jarring as early or late as daylight will permit.

We spread the sheet under the tree and then strike the trunk, or, in case the tree is large, each main branch. A sharp blow is required, as only a sudden jar will surely fell all the weevils to the sheet. The spike or padded mallet permits this without injury to the tree.

As soon as the jarring has been thoroughly done, we examine for the insects on the sheet. These little beetles look so like the little bugs that will be dislodged by the same blow, that only sharp looking, especially at first, will detect them. Each year I perform this before my thirty or forty students, and often they will declare the first night that there is not an insect, when perhaps there are a score on the sheet. At first, pick up every thing that looks like a little bug, and learn by close scrutiny whether it be bug or insect. If the latter, it will soon move when taken in the warm hand; we soon get so we see the weevils very quickly. Bertie and Katie are a great aid to me in, catching the weevils, as well as in moving the sheet. It is great fun for them, as they eclipse their father in the number caught. To kill the insects we crush them between the thumb and finger. This is quick, sure, and not disagreeable, as the insects are so small. Often we may omit the jarring for two or three nights. If we get no curculio, or only two or three at a tree, we can safely wait a day or two before we try again. It is often safe to omit jarring for two or three days. I have found that I have to work more or less all through June. This is for central Michigan; and taking the years together, I have not had to jar more than fifteen times in a season. This seems little labor when we consider the results—plenty of luscious plums to sell and to keep, or, best of all, to give away to our good neighbors.

It is a good idea, though I have never done it, to gather all the plums that fall, and burn them. This prevents the development of the insect—now a grub, feeding on the pulp of the plum—and so makes the insect more scarce the next season.

The reason Judge Romsdell, Michigan's great plum-grower, thinks the curculio an advantage, is that it can be kept under, and the plum crop saved. Most people, through ignorance or neglect, will not do this, and so plums will always be scarce, and always bring a high price in the market. Again, when the trees set very full, the plums should be thinned; by allowing the curculio to sting a portion of the fruit, the thinning costs nothing.

A. J. COOK.

Agricultural College, Lansing, Michigan.

Last fall, just about plum time, I visited one of our bee-men, friend J. Mattoon, of Atwater, Portage Co., and among other things I took a look at his plum-yard. This yard was not very large, but it was filled with the

most luxuriant, thrifty-looking plum-trees I ever saw before in my life; and if I remember correctly, he said he had just sold fifty bushels of plums out of that "chicken-yard," and that he received for them an even \$200. The trees were got into bearing shape by underdraining, subsoiling, use of fertilizers, and all modern improvements. Then chickens enough were kept in the yard to keep the ground as hard and bare of vegetation as it usually is for a few rods around the front of a country schoolhouse. The trees were jarred in the way Prof. Cook mentions, but the chickens gobbled the curculios, rendering the use of a sheet unnecessary. Friend Mattoon succeeds with bees, plums, pears, strawberries, and every thing of the kind. Do you know why?

After the above article was in type, we received the following letter from Prof. Cook, touching on another subject:

POLLEN AND WINTERING, AGAIN.

We have just had a bad mishap with our bees; but it gives forth clear evidence on the pollen question. Our bees were in fine condition March 1st. Our cellar has six inches of water in it, and keeps a uniform temperature from 38° F. to 45° F. By an accident, mice got into the cellar, and so worried the bees in three hives that they ate all their stores, what the mice did not eat, and starved. Of the remaining colonies, six had much pollen. Four of these have diarrhoea very badly, the other two considerably, but not seriously. The colonies having no pollen have no diarrhoea, and are in fair condition, though their combs and hives are badly knawed by the mice.

I think I can say truly, then, that bees are safer in an atmosphere that is too cold or too warm, without pollen, and also decidedly safer in case of an invasion of mice. March 1st there was no sign of diarrhoea. Whatever disturbs bees will endanger them in case pollen is present, and confinement necessary. Keep the bees quiet, and the pollen is harmless—so I think, as the result of several winters' close observation and experiment.

April 25, 1885.

A. J. COOK.

APIS DORSATA.

FRIEND BUNKER TELLS US ABOUT HOW THESE BEES BEHAVE IN THEIR HOME IN BURMAH.

DEAR BROTHER ROOT:—I have just returned from the hills, and while traveling I have been studying *Apis dorsata*, and now make a report of progress. There seems to be two kinds of this bee in Burmah, each quite distinct, though I have not yet secured specimens for comparison. One kind is yellowish in color, and usually builds nests on the limbs of very high trees, or in rocky cliffs, while the other is nearly black, hairy, and builds in thickets, on limbs of trees, or on creepers, often near the ground. Both are unicombed bees. The former is often vicious, the latter kind is very gentle, according to all reports, and the natives have no fear of it at all. They often approach the nest of the latter by daylight, and take off pieces of comb, without smoking or protection of any kind whatever, and without often being attacked by the bees. The former kind defends its nest with great vigor; and if they once set

upon an enemy, they follow very persistently for a long distance, and sometimes natives thus pursued must take to a neighboring stream to escape.

One ruse for escape is to break off a thickly leaved bush and plunge into the water, and allow the branch to float down with the current, while the fugitive plunges down into the water. The bees then follow the branch down stream, and lose sight of their victim. Yet, the first kind with the yellow markings is not always so vicious, as they can be easily subdued with smoke; and if handled carefully they seem to be as gentle as many kinds of *Apis mellifica*, so I judge. Both kinds leave Burmah at the beginning of the rains, and return the first of February of each year. They usually return to their former place of abode. This is especially true of the yellow kind, which occupies a chosen tree or trees in a particular locality year after year, so that the natives buy and sell these trees as valuable property.

I judge that these bees migrate to some distance to the north, for these reasons: 1. The reason why they migrate at all, seems to be the exposed position of their nests, on the under side of the limbs of high trees, exposed to all weather. The high winds and violent showers of the beginning of the monsoons would always destroy their nests. I never saw a nest survive the rains; hence, migrating on account of the rains, they must needs go to a climate where the rains are less violent, or where they can find sheltering cliffs in which to build. 2. When they return they are often found resting near the ground, before selecting the tree on which to build a new home. Sometimes they will rest there a week, and then take flight again. At such times they are very cross, and the natives are very careful not to go near them. There are no cliffs or rocks in Burmah in which these bees can build. If there were they might remain here the year round, as I understand they do in Ceylon and in Northern India.

In the Padung-Karen country, about 80 miles N. E. from Toungoo, these bees are in some sense domesticated, also the *Apis Indica*. In order to secure the service of the *A. dorsata*, the Padungs dig a trench in a side hill, and drive a stout stake, inclined about 45 degrees toward the down slope of the hill, into the ground, and lean branches of trees against the stake on either side, making a shield from the wind. The *A. dorsata* returns to these places year after year, and the natives secure bountiful harvests of wax and honey, always leaving some for their yellow workers. May it not be that the *A. dorsata* builds one comb, only because it does not usually find a place to build double combs? The comb is so large that it must indeed be a large limb of a tree to give room for double combs. From all inquiries which I have made, I am strongly inclined to believe that the *A. dorsata* can be domesticated, especially the black-colored species. Yet, to insure success, doubtless much study must be given to the habits of this bee, and all the conditions of domestication be approached as near as possible to their wild state. The fact, as I am informed, that, in regions of less rain, in cliffs and rocks these bees are found year after year, goes to show that migration is not necessary to this bee as to "birds of passage," etc.; that if the conditions are favorable they may be kept the year round. The fact that these bees can be mistaken for hornets by the natives, as in Mr. Benton's experi-

ence in Ceylon, shows how little we can depend on their judgment in such matters.

I now have two swarms of the *A. dorsata* promised me, and men out after them. Of course, I am now speaking of this bee only from report, and very little from experience. I hope in due time to speak from experience, and have something of value to report on this most interesting insect.

Toungoo, Burmah, Feb. 28, 1885. A. BUNKER.

[For later report, see page 314.]

MRS. JENNIE CULP'S REPORT FOR 1884.

AND A FAIR REPORT, EVEN THROUGH THE BAD SEASON OF LAST YEAR.

I AM again so late in sending my report, I fear, Bro. Root, you will say of me as the good sisters at camp-meeting say, "Sister Culp always brings up the rear;" and I will add, especially if it is her day to do the cooking. I received a postal from one of your clerks some time ago, saying, "We want your report, if it is a failure." Now, what possessed her to think I had failed? Was it because she saw me up at Medina visiting when I ought to have been home looking after my bees? or was it because she knew we had extremely hot dry weather in our part of the State? Be that as it may, I am not ready to go into the failure list yet. No, no; for surely Providence smiled upon me again, but not in such a bountiful manner as the preceding year.

Fall of 1883 I put into chaff hives 47 colonies; all came out in good condition; and as my object was honey, and not increase, I prevented swarming. The indications were that the honey season would be of short duration. I extracted but once, taking 1740 lbs. of beautiful white-clover honey, and 350 lbs. of section honey; in addition to this I set away 100 frames of nice white-clover honey averaging 10 lbs. per frame, for winter feeding; also had 100 new wired frames filled with fldn. drawn out ready for this summer's work. In the fall, removed the "bug-juice," gave them the white-clover honey, and, as a consequence, to-day, Apr. 16, 1885, 46 out of the 47 were out on duty strong. A great many in this locality have lost three-fourths of their bees; some all. We are not so badly off as the good brother at Bowling Green represents his county to be; we still have enough left for "seed."

MRS. JENNIE CULP.

Hilliard, O., Apr. 16, 1885.

Thanks for your report, my good friend Mrs. Culp. I presume the reason why that postal read as it did, was probably because I happened to think of you, and so told one of the girls to ask you for a report, adding that we wanted you to send it, *even if it was a failure*. They probably got hold of the last end of my remark, and omitted the first part. I have thought a good many times that probably some of the friends would think we are a queer sort of people here; but with the hurry and rush of many duties, it was the best I could do, and so it went. I am very glad indeed to know you have wintered so well; and your report strengthens still more my opinion, that those who take pains will prosper.

The hand of the diligent shall bear rule; but the slothful shall be under tribute.—Prov. 12:24.

HOW FAST DOES A SWARM OF BEES TRAVEL?

FRIEND BRAYMAN SUGGESTS THAT THEY SOMETIMES GO FAST, AND SOMETIMES THEY GO SLOW.

NOW, Bro. Root I call you brother, because I believe that all good Christians are brethren, for our Master said, while here, that "He that doeth the will of my Father which is in heaven, the same is my mother, my brother, and my sister"), I want to say a little about how fast bees fly when going off, for I had a little experience with some last season. I had a very large swarm come out on a Thursday, and I hived them and placed them where I wanted them to stand, and they went to work all right, as I supposed, for they commenced to draw out the comb (from fdn.) and filled each frame nearly full of nice white comb, and stored some honey. On the next Monday forenoon, about 11 o'clock, another swarm came out, and I hived them all right; but having occasion to go and help a neighbor raise a barn-frame in the afternoon, I left No. 2 swarm where I hived them, till night, before moving them to where I wanted them to remain. While I was gone that afternoon, swarm No. 1, which I hived Thursday, came out of their hive, and clustered upon an apple-tree, and my wife took another hive and hived them in that. When I came home at night I placed them both, Nos. 1 and 2, upon stands where I wanted them to remain. On Tuesday I went out and looked at them, and No. 1 was restless and uneasy. I told my wife that they would not stay, or, at least, I thought they would not; so I went out about every 15 minutes to see how and what they were doing.

About 12 o'clock I went out, and they appeared about the same as usual. I went in and had not sat down more than five minutes when my little boy came and said, "Papa, your bees are swarming."

I went out, and I saw that they were not going to cluster, for they rose higher than usual, and were making quicker motions than a swarm that clusters. Soon I saw that they were making across my orchard. I started after them. Well, how far do you suppose I went before I lost all sight and hearing of them? About 15 rods. I gave up the chase, and turned around and came back, and lo! No. 2 had caught the spirit, and they were tumbling topsy-turvy over one another, as if they could not get out fast enough. I lay by the hive waiting for the queen, and the good wife watching where they were going to cluster; but, nary a cluster; they, too, started for the woods, but in an opposite direction (east) from the others. I followed them; some of the time I walked, and some of the time a little faster, till I came to the tree into which they went. Now, I believe it makes some, if not all of the difference how far they are going, how fast they fly.

Waldo, Wis., Apr. 15, 1885.

A. H. BRAYMAN.

You make a good point, friend B.; and, by the way, is it not true that it is difficult to lay down rules for a great many of these things? Sometimes bees behave one way, and then again they don't. I have seen a

swarm of bees moving overhead when it seemed to me they went faster than a horse could canter; at other times one could almost keep up by walking briskly.

SOMETHING NEW IN TIN PAILS.

GRADUATED TO MEASURE EXACTLY HALF-PINT, PINTS, QUARTS, AND GALLONS.

I THOUGHT some time ago I never wanted to see any thing new any more in the way of pails for honey; but here we are again with something newer and better—at least, that is what everybody says, and everybody wouldn't be very likely to be mistaken.

The smallest pail holds one quart when it is full, and the largest one holds a gallon when it is full, and all of them are divided by a bead in the tin, so as to show you just how much it is when it is so full. Still further, this beading is lettered, so that folks who are not very smart can tell just how much there is in the pail, by reading the letters and figures that stand under the beading. Now, I do not believe I could have been in-



THE NEW GRADUATED TIN PAILS.

duced to have started a new tin pail, if it were going to cost any more money than the old ones; but here they are, with this new graduated device, and not a cent more in the way of expense. The quart pail is 5 cts. only; the two-quart, 10 cts.; the three-quart, 15 cts., and the gallon pail only 20 cts.; and the prices by tens and hundreds are the same as those on page 21 of our price list. The pails, as you will observe, are, however, a little taller than our celebrated nested pails; and, in fact, a graduated pail can not be made to work real nicely unless it is rather tall. Now, then, the matter is right here before you, and you can do as you choose about investing in the new-fangled pails. Oh yes! when you order, just say "Novelty pails," and then you will get the right kind.

Any kind of a can or pail can be made cheaper by making the length up and down greater than the diameter: for tin can be cut to make the body, practically without waste; but in cutting the circles for tops and bottoms, a good deal of tin is wasted; and the larger these tops and bottoms, the greater the waste. Tin pails, however, do not ordinarily meet with as much favor as those about the dimensions of an ordinary tin cup; viz., with the diameter a little greater than the height.

TALK ABOUT GLEANINGS, BEES, AND DRONE-EXCLUDERS.

SOME KIND WORDS INTERSPERSED WITH VALUABLE FACTS.

GOOD MORNING, Mr. Root. This is a pleasant April morning. Please take a seat, if you can spare a few leisure moments, as I wish to talk with you. Spring time is here; the sun shines, the birds sing, and all nature begins to rejoice in praise to its Author. A more fitting time could not well be found to talk with a friend.

Well, I need not tell you I take GLEANINGS; your list of subscribers tells that. I hope you will excuse me for expressing my opinion of it to you, for it has not been formed in haste, or for the want of apicultural literature, to say nothing of nearly fifty years' experience in bee-keeping. With all this I find GLEANINGS all the more valuable.

Of course, some of the inventions and articles on bee culture are enough to make a good-natured man smile. Notwithstanding, those articles, talks, and discussions in GLEANINGS bring out some grand ideas, and much valuable information which the bee-keeper can not well afford to do without. Then your talks in *Our Homes*; you have such a clever and happy way of telling it; it must certainly meet the approbation of every good man and woman, boy and girl.

I wish every person in America, old, middle aged, and young, white, black, or brown, would turn to GLEANINGS, March 15, 1885, page 211, and read it; and those for whose special benefit it was intended should read it morning, noon, and night. Then get up in the winter at midnight and read it, till their knees would tremble like a Belshazzar; yea, even more, that the thunders and forked-tongued lightnings would flash it, and every stone, straw, stick, leaf, and tree would echo it in their ears until they are reclaimed. For, to see so many people going through the world lying, stealing, and in a heedless, lazy, slipshod, careless way, borrowing and sponging their living off their neighbors, well deserve to be treated with an ironical reception. Can they read those lines without a blush? If so, oh shame! If the ministers in the churches had the courage to preach such sermons, and try to impress it, it certainly would do much good; it is certainly one of the best sermons I ever read. I hope the reader will look it up, and see if he doesn't agree with me.

BEES.

Well, I was going to say something about the bees. Last summer there were the most bees I ever knew. Nearly all the neighbors had from one to 10 or 15, some 100 colonies. The bee-fever was running high; in fact, it was contagious; but at this writing it assumes more the nature of an intermittent; the pulse has fallen from 140 to considerably below blood-heat. Respiration is long and heavy.

Some have lost this winter one-half; some two-thirds, and some all. Alas! how soon fond expectations perish! In all my experience with bees I never knew so great a loss. It was not the cold that killed them; they died of diarrhoea. Last season the bees gathered tons of poor honey, much of it black as ink. I never saw any thing like it in honey. It had a nauseous smell, and very disagreeable taste. Some of it was so bad it had to be buried in the ground. This poor honey is what killed the bees; it gave them the diarrhoea, and they died before the winter was half over. Many

got this poor honey in the surplus boxes and brood-chamber. I put on 1000 surplus boxes, and every drop of honey in them was excellent. But in the brood-chamber there were large quantities of poor honey. I can not account for it, except that I put on the surplus boxes over two weeks later than my neighbors, and caught nothing but locust and white clover, then took them off. The poor honey in brood-chamber resulted in the loss of several colonies. I have quite a quantity of this poor honey. I don't like to let the bees have it, for fear they will retain some of it for next winter. What would you advise me in such a case?

Now, here comes another query: My bees were all on summer stands, and apparently went into winter quarters with equal chances. After this long cold winter, some of them on the first warm day in April came boiling out as if to say, "We stood the winter all right," and one colony in particular was bright, clean, and dry; not to exceed a tablespoonful of dead bees was in the hive, and the third day they were carrying in pollen.

DRONE-TRAPS.

Now something about drone-excluding devices and traps. The best device I know of is Alley's drone-trap, with my improvement attached. It is so satisfactory I see no need of anything better. On page 231 of GLEANINGS, April 1, 1885, you gave us a device from D. C. Noble, for excluding drones, which is another instance of the difference between theory and practice. It reminds me of a man who once applied for a patent to raise sheep without any wool. He says the invention is his, and calls it a drone-excluder, to be placed at the entrance of the hive, hinge side out. The doors are one-twentieth of an inch longer than the space, causing them to stand out at the bottom; and as the drones come pushing along they will raise the doors and pass out, but can not enter again.

If you remember, Mr. Root, you thought the hinges rusting might be an obstacle to the movements of the doors, and said you would be very glad to hear from some one who had used these machines. Now, I have no reason to doubt but that Mr. Noble is a nice man, and would not offer to the brother bee-keepers an article if he did not think it possessed real merit, and feels confident his device is what he claims for it; but I am inclined to think he has never given it a thorough trial. Many years ago I did not like the plan of letting the drones eat so much honey; and as soon as they could be dispensed with I frequently sat down by a colony of bees, and, with the sharp-pointed blade of my pocket-knife, I speared them as they pushed their way out on the alighting-board. After some practice I become an expert, and could take them as fast as I could count, but this took time and patience. So in 1855, nearly 30 years ago, I invented a device exactly like Mr. Noble's but made of different material. I used very heavy hard-finished paper, with fine wire hinges for the doors. One afternoon, about 3 o'clock, I placed this device on the entrance of a strong colony, well supplied with large fat drones. I sat down, folded my hands, and awaited results. Soon the bees came tumbling through the open spaces, heels overhead, then up and off about their business. After some delay I perceived a vibrating movement at the small doors; they finally opened, out rushed the drones like rats from an old barn on fire. I clapped my hands, and exclaimed, "Eureka!" But, alas! my fond expect-

tations soon vanished. Further observations convinced me that my northern laurels had degenerated into weeping-willows. When the outgoing drones opened the doors, the returning ones walked in, although the doors were so small as to but little more than admit the largest-sized drones one at a time. Bees, like some little boys, soon learn tricks, and a good many had ones too; they are as quick to learn tricks as any of our domestic animals. Well, I will tell you how they worked their cards in this case; they were very accommodating to each other; the outgoing ones turned to the right or left, as the law directs, generally to the right. The incoming ones meet them, thus keeping the doors open. Well, they have some kind of a law, like when two railroad trains meet on the same track; the one having right of way pushes the other back, and some one keeps his head in the door, thus keeping it open. Sometimes the bees open the doors, and drones pass in by them. So I never applied for a patent. Such has been my experience, and such would, I think, be friend Noble's.

JOHN W. NIMAN.

Spring Mill, 3 Richland Co., Ohio.

Friend N., you are very kind, and I am sure I thank you; but it seems to me you are a little bit rough on neighbor Noble. Although I confess that I read his article all through, eager to hear him say he had tested it on his bee-hives, and that it worked beautifully, I rather expected something like what you have mentioned. But, did not your hive have an unusual plenty of drones in it? It seems to me there must have been, or those little doors would not have been kept open for all outsiders to get in. If there are only drones enough so that each one would go out by himself, and come back by himself, it seems to me the doors must work. The outsiders will, of course, stand around waiting, and probably one going out would open a door for half a dozen to get in. But toward the close of the day, didn't the machine fence out at least a part of them? I think may be the metal doors would be less liable to the difficulty you mention, than paper ones.

A NEW PLAN OF FORMING NUCLEI,

GETTING BEES TO STAY, AND GIVING THEM COMBS FILLED WITH EGGS.

AS the time of year has arrived when most of the bee-keepers are thinking about preparing to furnish for themselves extra queens, to use in cases which occur in all well-regulated apiaries, where a spare queen is of great value through the loss of the old queen, or to supply a queen to the queenless half of a division in the swarming season, I will give the readers of GLEANINGS a new plan of forming nuclei, which I have used successfully for the past two years. On page 835 of GLEANINGS for 1884, I gave you a plan of wintering nuclei, in which I spoke of a box for shaking the bees into when wintering. The box for forming nuclei need not be so large as those spoken of there. Those I use are made by getting out two pieces, 6 inches long by 6 inches wide by $\frac{3}{4}$ thick. Also two pieces, 12 inches long by 6 wide, 2 by $\frac{3}{4}$ thick. The latter are nailed to the former, so as to form a box $10\frac{1}{2} \times 6$, inside measure, without sides. For sides I use two pieces of wire cloth, cut 12

inches long by 6 wide. One of them is nailed permanently to the box, while the other is left so it is easily removable. In the top of the box are bored two holes—a large one for the funnel (such as is used in putting up bees by the pound), and a small one through which the queen is to be put when she is given to the bees. Having the box and funnel prepared, I proceed to a colony that can spare some bees, and take out a frame well covered with bees (being careful not to get the queen), and set it down by the side of the hive, giving it a little jar, sufficient to cause the bees to fill themselves with honey, but not enough to dislodge any from the comb. If I wish a very large nucleus I take several frames, but one frame well covered with bees makes a good nucleus. As soon as the bees are filled with honey they are shaken down through the funnel into the box, when the funnel is removed and the hole closed. The frame is also placed back in the hive, when the box is to be carried to the cellar, or a dark cool room, where it is to be left for two or three hours. At this time, go to the colony from which you can best spare a queen, and take her in a cage to where your bees are in the box, when you will find them all in commotion, owing to their queenless condition. Let the box down suddenly, so as to jar all the bees to the bottom, when you will let the queen run in through the small hole with the bees. Now put the bees back, and leave over night (I generally cage the bees about 1 P. M.), when in the morning you will find them clustered and quiet, like a swarm. I now get two combs, one with honey and one having a very little brood in it, placing them in a hive, the size of which is contracted to suit by means of a division-board. This hive is placed where I wish the nucleus to stay; when I get the box of bees, remove the movable wire cloth, and shake them down at the entrance, into which they will go, fanning their wings just like a natural swarm. In two or three days more I proceed to form another nucleus in the same way, but this time I use the same queen I did to form the first, taking her out of the nucleus when I wish to give her to the bees. Thus I keep on using the same queen till I am through wanting nuclei.

Last season I made 20 with one queen. As soon as the queen is taken away, the nucleus is used the same as any queenless nucleus is. By this plan I can form a nucleus at any time I desire, and always have every bee stay where put; for after being with a strange queen over night, the bees, if any attempt to return, are treated at their former home as strangers. The nucleus is also ready to go to work at once, bringing in pollen and honey, according to its strength, the same as does a natural swarm. Again, by giving a laying queen, she lays all the eggs the nucleus can care for in the two or three days she stays, while she is kept laying all the while. I have tried using virgin queens instead of those laying, but some of them the bees will kill, while those which are not killed are a long time getting fertilized. Swarms can be made this way, and queens successfully introduced; but the chief value of the thing is in enabling one to form a good nucleus just when and where he pleases. I have been four years in perfecting it, and after testing it all of last season, and the latter part of 1883, I now present it as the best plan extant for forming nuclei in time so all can use it for the season of 1885.

16—G. M. DOOLITTLE, 40—80.

Borodino, N. Y.

Friend D., your plan is certainly sensible in many respects. This queen that you move around is, I suppose, to be the one you have selected to breed from, and, of course, valuable. During a dearth of honey it seems to me there might be some danger to the queen in introducing her so many times; but if the precautions you give are carefully followed, perhaps there will not be. You have tested it thoroughly, and probably know. Now, instead of making a cage as you suggest, why not take the usual cages we use for shipping a pound or a pound and a half of bees? These are already at hand in most apiaries. I suppose half a pound of bees would be enough to start such a nucleus, especially if they have some brood that will hatch out pretty soon. Two things contribute to prevent the bees from going back home; one is, the treatment you give them would tend to make them behave like a natural swarm; another is, that as they have a laying queen that they have recently accepted they would likely stand by her. I can imagine just how these little fellows would start out to work, if the nucleus was formed, say, during fruit-bloom.

WIRE NAILS, FOUNDATION - FASTENERS, ETC.

DR. C. C. MILLER TELLS US SOME OF HIS EXPERIENCE.

I HAVE just made an order for 6½ lbs. of wire nails of 7 different sizes. I have used a good many pounds of them in the last few years, and think I have learned something of their merits and demerits. They are very superior to ordinary nails in one respect. Where the latter will split the wood, on account of cross-grained or thin stuff, the wire nail, on account of its shape, goes through without splitting. This advantage is so great that I would not be without them; at present prices some kinds are cheaper than other nails; for although the price per lb. is greater, there are more nails in a pound, making the cost per nail less. They are excellent for clinching; you can't break them. The ease with which they bend makes them objectionable for some uses. I nailed a strip with 1½-inch wire nails for a screen-door to slam against. The constant slamming made the nails gradually bend and pull out. Common nails, on account of their rigidity, would have remained unchanged.

In their favor, it is stated that "when a nail of the old kind gets drawn out a little, or 'loose,' as we call it, it comes out very easily; but these wire nails, being all of a size, hold their whole length." From this I inferred that a wire nail would hold tighter than a common nail. The fact as stated is correct; the inference, incorrect. In spite of the fact that a wire nail holds its whole length, it takes less force to pull it out, or, in other words, a common nail holds stronger. I had hundreds of wide frames, some of them made with wire nails, some with others. In some cases where the bees fastened the bottom-bars to the tops of brood-frames, on attempting to lift out the wide frames the wire nails pulled out; the others, never. The wire nails, being smoother, start easier. In case the warping of stuff starts a nail, the wire nail will hold, after it is started, stronger than a common nail; but for or-

dinary purposes, I should say a common nail holds stronger. An objection is the difficulty of obtaining them at hardware stores; but I can always get them just right from Medina. But after all is said, I think a bee-keeper who has never tried them will be surprised to find how desirable wire nails are, and, after trial, will never want to be without them.

FOUNDATION-FASTENERS.

Heddon says he would rather have the Parker than the Clark fastener, and Mr. Gray's inventive genius has been brought into requisition to improve on the Clark. I do not wonder much at this, if the instructions are followed which are given in Root's price list. I have never seen Gray's machine, but can not imagine what improvement it can be to have the sections thrown out, unless it be to throw them into place in wide frames or supers, and I do not understand that it does this. Until I got the Clark I was well pleased with the Parker, but—just here I stopped, and went over to the shop to interview the young lady who puts in the foundation.

"Emma, give me an idea of how the Clark compares with the Parker as to ease and rapidity."

"Well, I can put in 200 starters in a day with the Clark, besides other work, and I don't know that I can put in 1000 with the Parker. At any rate, 1000 with the Parker would tire me more than 2000 with the Clark."

Then I had her try to use the Clark according to directions—"As the presser sinks the fdn. into the wood, draw one side of the section forward a little, and this drawing motion rubs the wax in the wood." It seemed to be harder, slower, and in no way better work. As she has put in a good many thousand very satisfactorily, I give herewith

HOW TO USE CLARK'S FDN. FASTENER.

Get two fire-bricks, to heat and use alternately. Common bricks will do, but do not last long, as the heat cracks them. Common flat-irons, such as women use for ironing, will do, but lose heat quicker. Lay the fdn. starters in piles in front of the hot brick before you, having the edges of fdn. next the brick, piled evenly. The edge of the fdn. should be warm enough to be pretty soft, taking care not to melt it. Give the presser a quick pressure with the feet, *letting it fly back immediately*. No "drawing forward one side of the section a little" is needed. If the starter is small, push it up straight with both thumbs before lifting the section; if large, simply turning it over may suffice; but I notice Emma deftly helps it to its place by lightly touching with the fingers of both hands in the act of turning over the section. I watched her for some minutes at her regular work when she did not know I was timing her, and she put in 7 starters per minute. I then asked her to put them in as fast as she could, and she put in 10 per minute; so it will be seen that, without hurrying, she could put in over 400 in a day of ten hours. As to the quality of the work, they are in to stay, and a good many of those fastened by the Parker dropped out.

C. C. MILLER, 200-258.

Marengo, Ills., / Apr. 17, 1885.

Thanks, friend M. A little practical experience is just what we want. Friend Clark, who invented the Clark foundation-fastener, gave the instructions we printed with it, and it has never been changed since he first gave us the machine. Very much depends on getting used to these helps, and you know how often one man decides one

way and another man another way, with precisely the same machine. We get along faster and better, we think, with the Gray machine; but may be our directions would be modified now if they were written over again.

SOMETHING GOOD FROM A RETAIL DEALER IN HONEY.

SHALL WE PUT OUR NAME AND ADDRESS ON THE HONEY WE PUT IN THE MARKET?

I RECEIVED GLEANINGS for April 1, and read with interest Mr. Hutchinson's article, and I would indorse it all with this exception: I think that, when a person has produced comb honey of No. 1 quality, he should put his name and place on each package, in a neat plain type, also the name of the honey—clover, basswood, or whatever it may be, and require his commission merchant to sell it with that brand upon it; and if he should discover that his commission merchant had scratched his name off, at once close his account with that firm, and secure another that would promise not to steal his good name. Further, never put your name or brand on any package, the contents of which is not first class in flavor, and pure as purity itself, and then ship it to the same market each year. A good name is of more value than appearance, as it will wear longer.

I have been a retailer of fruit, nuts, and comb honey for 15 years, and know that, in fruit, the good name of a shipper is valuable. The tradesman finds out shippers that are reliable. There are several shippers of berries and peaches in Delaware whose name will sell their goods in the Boston market quick, at full prices, when others have to wait to be inspected. Why? Because they have never tried to make their goods look better than they were, and the buyers have found it out. Their seconds are sent to market without their name, and sold on the merits of the article. I have seen wagonloads of crates of strawberries and blackberries sold, when the market was quick, without being opened, the buyers engaging simply by the name of their favorite shipper. Why can't it be so with honey?

There is a lady in Vermont who makes maple sugar, and has sent it to one firm in Boston for the past five years. Every box is engaged before it gets to Boston, and we have to pay from 3 to 5 cents a pound more than common maple sugar sells for, and are glad to get it.

Friend Root, you, on page 239, hit the nail on the head where you say, "When you want to buy honey, or any thing else, be sure that a good man's name is on the label." And here I want to say a word for R. Wilkin, of San Buenaventura, Cal.; for on page 173 he seems to be feeling badly. Tell him to cheer up, and continue to send California extracted honey like this last lot in quality, to the Boston market, and he will surely reap his reward, for there was never any other nearly as good here before. I bought one can of 60 lbs. to try, and am now on the tenth can. Every one whom I have induced to try it has liked it very much, and a consumer always remembers where he got a nice article, and comes again.

One more for Brother Hutchinson. On page 256 he closes his article thus: "But, says some one, we can not get so much honey per colony when it is stored in sections as we can in frames. Beg par-

don, my friend; that is simply because you don't know how." Brotherly love requires the educated to instruct the ignorant. Please tell us how to do it. I am willing and anxious to learn; don't be afraid that you will overstock the market; lower the price five cents per pound; and four times the quantity can be sold. I have retailed 2500 lbs. of honey this season. CALVIN W. SMITH.

Wellesley Hills, Mass., Apr. 12, 1885.

Friend S., I did not understand friend H. to say that the producer's name should not be on every package. I thought he objected to a large-sized placard. I entirely agree with you, that the producer's name ought to be on every thing he sells, as far as practicable; and even were I going to buy eggs I should like to know where they came from. Stoddard, in his little book called "An Egg-Farm," says that a wagon should be run to the towns adjoining, delivering fresh eggs the day they are laid, or, at least, the day after; and I think he is right in saying that eggs so delivered would bring a cent or two more a dozen than those bought at the groceries. Only a few weeks ago, before our hens began to lay, one of the children was sent up street for some eggs. A part of them were bad. The one who took them to market doubtless knew they were bad; at any rate, he did not *know* they were good; and in either case I should like to know who did it. We are in the habit of paying a cent or two more for butter when we are sure that a certain individual made it. I do not know why this should not be the case with comb honey. With extracted honey it would certainly be of the greatest importance to know whom it came from. We have the same state of affairs in maple sugar and maple molasses. Sometimes a clerk will come up, saying, "There is a man here who wants to sell you some maple molasses."

"What is the name?"

"Why, it is Mr. —."

"Tell him we do not care to buy any to-day."

Now, friends, had the clerk mentioned some other names that I know well, I would have gone down to see the molasses at once. Yes, we have those whose name would be such a guarantee that I should be safe in telling the clerk, "Tell him we will take all he has got." Now, my friend, are you one of that sort of people? Our new potato-book has some grand thoughts on this very subject.

WINTERING.

SOME SENSIBLE SUGGESTIONS IN REGARD TO OUR RECENT LOSSES.

WE ALL can now look over the wreck of the past winter and count our losses. We are so used to the remark, "My bees all dead; how are yours?" that we scarcely expect any thing else. The fact is, there are but few left in this locality, except with those who use a chaff hive, and in these the loss is from 25 to 50 per cent.

I had 55 colonies last fall in excellent condition; now have but 40, which is not so bad, being the lowest percentage of loss in this neighborhood, so far

as reported. Yet this is my first loss since I commenced bee-keeping ten years ago. My theory for wintering has been, plenty of bees, plenty of stores of good food, and a good chaff hive. These conditions were all present last fall; but it seems something was still lacking to meet the extreme cold of last winter. Most of those dead colonies perished of starvation, having consumed all the honey in the combs on which they were clustered, and with a thermometer scarcely above zero; for two weeks in March they were unable to change their location in the hives, although winter-passages were at hand. My past success in wintering made it a matter of indifference about reducing the space below the ten frames by a division-board, except an occasional weak colony. One such came through the past winter, on six frames, in good condition. Had I reduced all to the same space, what would have been the result? Will those who have been practicing the division-board system report your percentage of loss, with the particular condition, that we may get an idea of its real value?

Observation shows, that before an extremely hard winter the bees do but little swarming, instinct teaching them to hold their strength to meet the rigor of winter; also that a disastrous winter is followed by a summer of unusual activity in the bee-yard, a seeming effort being made to recover the winter losses. Such I predict the coming summer. Let those of us who are more fortunate share with the less fortunate—at swarming time—at reasonable prices, that all who wish may utilize those empty hives and well filled frames.

J. NEWTON WHITE.

Grove City, Mercer Co., Pa., April 9, 1885.

THE HEDDON HIVE.

17 $\frac{1}{2}$ AND 17 $\frac{3}{4}$ FRAME.—LIABILITY OF COVERS TO BLOW OFF, ETC.

FRIEND ROOT:—You say in GLEANINGS, page 215, that great confusion is going to result because friend Heddon uses 17 $\frac{1}{2}$ instead of 17 $\frac{3}{4}$ frames. Why can't your customers specify which frame they want? It's just as easy to make the hive for 17 $\frac{1}{2}$ as 17 $\frac{3}{4}$. The honey-board can be made longer; and by using $\frac{3}{4}$ -inch instead of $\frac{1}{2}$ -inch thick pieces on end of super, you can make the super as long as the hive.

Dr. Miller is dreadfully worried about that 15-lb. stone. Now, doctor, you are worrying yourself for nothing. The cover, if rightly made, needs nothing to hold it down. I have used them, and never had one blow off; and they have been through some pretty hard storms too. In my opinion, a wind that will take the cover off will move the hive too. I have seen large covers made the same way, and was told that they never blew off. That 15-lb. stone is to keep the shade-board in place, which being 2x3 feet, presents considerable surface to the wind. And, doctor, have you been out of practice so long that you have no remedy for backache? I use the Heddon system adapted to 17 $\frac{1}{2}$ frames, and think that is the best out. I use 17 $\frac{1}{2}$ because I commenced using it when I first commenced, and don't want to change. Those that are so loth to take hold of the Heddon system will be well satisfied with it, unless I am greatly mistaken.

The past winter has been an extra severe one for bees in this section. Out of 27 stands packed on

their summer stands, 18 are dead, one more will die, if not more. Yet I don't consider myself in Blasted Hopes, but will try again. E. L. MASON.

Hillsboro, Wis., April 7, 1885.

In regard to the 17 $\frac{1}{2}$ frames, friend M., the 17 $\frac{1}{2}$ are always in stock, and all the appurtenances belonging thereto. In fact, we keep a great warehouse full of hives and frames and other fixings. Now, should we build another great warehouse and keep that full also, that we may be ready to fill orders for either kind? Again, nine-tenths of our customers order Simplicity frames and Simplicity hives, or Langstroth hives and Langstroth frames, without saying any thing about dimensions. What kind should we send them—write back and inquire, and possibly have them so vexed by this amount of delay that they will countermand their order? Then, again, suppose one wants to buy and sell hives and fixtures. Starting off on a shorter hive and shorter frame would be a national calamity. If you want to see how it works, try it, and it will not take many years for you to declare you won't have any thing about you hereafter that is not conformed to the regular standard goods in common use by the majority of bee-men. The Heddon eight-frame hive is going to make trouble in the same way, to some extent; but if they are made to hold a standard frame, the trouble will not be nearly as great. I have sometimes really thought that it would be a kindness to refuse to make or encourage the making of any thing different from the standard goods. The veterans can use what they like; but for beginners to get a notion in their heads that they want something a little different, is a great misfortune. If nothing but staple goods are to be had, at moderate prices, it would do much to end these troubles with things that won't fit or work together.—I presume that we shall have to give up, that the Heddon covers do not blow off, since so many declare it is a fact.

A WORD IN FAVOR OF QUEEN-CLIPPING.

A SUGGESTION IN REGARD TO THE MATTER, FROM OUR GOOD FRIEND MRS. JENNIE CUTP.

IN your last issue, April 15, you say you believe the general opinion is that we do not want our queens' wings clipped; but "I am afraid to say so." Now, Bro. Root, I do hope, for the benefit of lady bee-keepers, you will continue to be afraid to say so. I have practiced it so successfully the three years I have been in the business, that I must say I favor it with both hands up; in fact, I will not tolerate a queen in my apiary unclipped, if I know it. I believe it is generally conceded that it does not injure her, but only mars her beauty. Of course, it necessitates keeping tidy around the front of the hive, so she can be readily found when a swarm issues. For me they seldom get more than a foot or two from the entrance, and I have never lost one yet. Just think of the advantage. No nervous excitement for fear your swarm will leave. Just pick up your queen, put her in a cage, move the hive the swarm issued from back a foot or two, cover it with a table-cloth, place the new hive where the old one stood. When the swarm gets tired waiting

for the queen to join them they will come back and enter what they suppose to be their old home. While they are passing in, release the queen and she will enter with them; then carry them where you want them to remain; put the old hive back in its place, and the work is done.

If there is no one to assist you moving hives, tie your queen-cage, with queen in it, to a pole, and they will cluster around it nine times out of ten, and you can carry them to the hive without assistance. Clipped queens for me, every time.

Hilliard, O.

JENNIE CULP.

HEDDON'S ARRANGEMENT.

COVERS WITHOUT ENAMEL SHEETS, ETC.

AS to friend Snow's article in GLEANINGS for April 15, page 275, I'll venture to say that he never saw a Heddon hive or a Heddon crate; or if he did, never used either. As to the cover, it suits me "to a letter;" don't want any "telescope" hives around me.

On page 274, same number, at the close of the first article, you say that you would like to look through Heddon's apiary and see if he or his students did not mash hundreds of bees when they placed the cover back on the hives in a hurry. Now, if you can't imagine how to put on a board cover without smashing bees, I will try to tell you. Simply place one edge of the cover on one corner of the hive; now shove the cover over the hive as quick as you have a mind to; not a bee will be killed, for the edge of the cover will brush off all bees on the edge of the hive; no smoking all around the edge of the hive, to drive the bees off. They are cheaper, cost less, and are easier to handle than the kind you use.

I have seen hundreds in actual use, but never saw one (that was properly made) that had warped enough to admit a bee under it. Even if they do kill a few bees, I think that the time wasted in bothering with a cloth or any kind of a mat over the frames is worth more than the few bees killed.

As to that hibernating business that Mr. Doolittle speaks of, I will say that it is no use trying. I have tried the same thing that he has, over and over again, with honey and without honey, and every other way, but they would not survive after a lapse of fifty or sixty hours—no use. I think that Mr. Heddon has "hit the nail right on the head in regard to wintering."

BEE.

Malone, N. Y., April 18, 1885.

Friend B., we do not, as a rule, publish letters with no name appended. Of course, we withhold the name where the party desires it, but your letter was sent without any signature whatever, except the one given above. By the way, it seems to me your remarks to the editor of your bee-journal are not very respectful, where you say, "If you can not imagine how to put on a board cover," etc. It has often been said, if you have no respect for the man, courtesy dictates that you should show respect for the office he holds. Before bee-journals had an existence, Langstroth hives, and many others, were made with a cover to slide over the top, as you suggest, and they worked beautifully without any bees in the hives. Yes, they did well for the first season, perhaps, or until fall; and in localities where propolis was not plentiful, *may be* they did well year after

year. But our bee-keepers of Medina County, and I guess a great part of our Ohio bee-keepers, will likely smile when they read your directions as given above. Our bees go to work, and cement their cover down tight with propolis. Sometimes they put it on so thick that it runs down inside of the hive, even filling the rabbets, and they seem to be especially fond of daubing great quantities around where there is a joint, such as is made by laying a smooth board on top of hive. Well, with both cover and the top edge of the hive plastered up with this propolis, *sliding covers* on is rather up-hill business. I have covered hives hundreds of times in the way you indicate; for before the Simplicity hive was given to the world, it was the only way we had of doing. I do not know but I shall have to take a trip up to Michigan, expressly to see some of the brethren handle Heddon hives without killing bees. I think I should prefer bothering with the cloth or mat, however, rather than see my bees killed every time the hives are opened.—In regard to Friend Snow's criticism on page 275, I admit that it is hardly kind or courteous; and, by the way, it impresses me just now that I have been allowing almost too much liberty in this direction. Now, friends, if it becomes necessary for us to criticise, can we not all try to be a little more friendly about it, and show a little more of a Christian spirit?

NOTES FROM THE BANNER APIARY.

NO. 65.

HOW THE BEES WINTERED.

LAST fall some of our colonies were given sugar stores in whole, others in part, while others had wholly natural stores. Twenty-five were in chaff hives, with the additional protection of manure banked up around them. Twenty-four were packed about one foot thick with hay, sawdust, and forest-leaves. Eleven were buried in a clamp, and 33 placed in the cellar. Of those in the chaff hives, five are alive. Some of those that died perished of diarrhoea, and the others show no signs of this trouble: they are "just dead." Of those packed in dry leaves, *every one* is dead; a few show *slight* traces of diarrhoea, but the majority are *simply dead*, with clean, dry combs of sugar stores. With the exception of one colony, and that starved by getting over to one side of the hive, the bees in the clamp came out bright, clean, dry, healthy, and strong in numbers. They have wintered the most perfectly that I have ever seen bees wintered. In the cellar, 8 colonies have perished, some of diarrhoea, and others showing no symptoms of it.

One fact stands out beautifully in bold relief—not a colony with nothing but pure sugar stores has perished from, or showed a symptom of, *diarrhoea*. I have noticed this ever since I began experimenting with sugar stores. Last year, when I lost nearly 60 colonies in a clamp, *not one* with sugar stores showed any symptoms of diarrhoea. At last, we have that arch fiend, diarrhoea, under our foot! Having conquered this enemy, we find, however, that there is *another one*. Mr. Heddon says his name is Jack Frost. This we are not yet prepared

to accept, nor yet to reject; but it certainly appears reasonable that he bears this cognomen. One thing is certain: Jack thrust his ugly phiz into our cellar, and glared at us several times last winter.

I have not seen a more graphic account of the severity of the past winter than one that I read this morning in the *Rural New Yorker*. It was written by Chas. W. Garfield, the genial secretary of our State Horticultural Society. I quote as follows: "We have had a terrible winter. Peach-trees on my place are killed; tender varieties of apples discolored; all raspberries and blackberries killed to the snow-line; plum wood is injured. I went into the woods to see how the oak grubs stood it, and found the young twigs on last year's growth in low places materially injured. I have not examined fence-posts yet, but it must have been 'tough on 'em' in the hollows." As Prof. Cook remarks, in an excellent letter in the same number of the *R. N. Y.*, "What is packing in such a winter as this?"

Well, my friends, *packing*, or *something*, has again enabled "Cyula Linswik" and her sister to successfully winter their entire apiary of 61 colonies. Please don't say it is locality, because nearly all the other bees in that vicinity are dead.

The majority of our 40 living colonies are, apparently, healthy, and strong in numbers. It seemed to be something like this: If a colony was going to live, it lived; if not, it died; there was no gradual dwindling away; every colony that was strong and healthy the middle of the winter has remained so.

I must thank Prof. Cook for his criticisms of one year ago upon my articles in favor of burying bees in clamps. Had it not been for this light touch of the spur I might not have buried any bees last fall. I will confess that I did not bury the bees because I expected them to winter any better than *any* of my bees, but rather to add another example to the number that are necessary in making a real demonstration. I expect to eventually adopt cellar wintering, not because bees can not be as successfully wintered in clamps, but because it involves less labor.

KILLING BEES WHEN PUTTING ON THE COVER.

I fail to catch your meaning, where, on page 214, you infer that Mr. Heddon or his students smash hundreds of bees when they place the cover back on the hive in a hurry. If you should raise a Simplicity hive off the bottom-board, and then replace the hive, would you kill many bees? I think not. The cases are almost parallel.

FIXTURES VS. DISPLAY.

I do not agree with Mr. Snow, on page 275. A description of fixtures is of more importance than a description of some honey-show. Of what *real* benefit is the latter? And why does Mr. S. indulge in such a *fling* at the Heddon fixtures? Has he tried them, and does he know what he is talking about?

THE CONTENTS OF BEE-JOURNALS.

Mr. Smith, on page 266, very nearly expresses my ideas in regard to the contents of bee-journals. If a journal is going to be a bee-journal, let it be a bee-journal, and not a mixture of bees, religion, strawberries, poultry, carp, silkworms, rabbits, tobacco columns, smilies, growleries, etc. I do not object to a discussion of any of these topics, if it is done in the proper place; but I do not consider a bee-journal the proper place in which to discuss them, and I have heard many others express similar views. If GLEANINGS could only be filled with such articles as those given us in the last two num-

bers, by Mr. Doolittle, Prof. Cook, Dr. Miller, and Mr. Heddon, it would tower head and shoulders above its competitors. Perhaps it would be as difficult to receive a sufficient number of such valuable articles to fill GLEANINGS as it would to induce its editor to make the desired change; and we shall probably have to try to be satisfied with GLEANINGS as it is, and thankful if we are allowed the luxury of expressing our opinions.

S. - W. Z. HUTCHINSON, 68-41.

Rogersville, Mich., April 17, 1885.

Friend H., I am very sorry to hear you have lost again so heavily, and yet I am glad to see you come out and own up as usual. Was it not the extra care that Cyula and her sister gave their bees that brought them through the winter so safely? Do you know what troubles we have had in wintering *our* bees? Well, lately we have had little or no trouble, and it is, in our opinion, and in *our* apiary, only a matter of careful preparation. Now, why your bees should die when I am quite sure you gave them this careful attention, as well as the rest of us, is something that stumbles me; I can not understand it. Cellar wintering in our locality would probably be a saving of stores, but I can not think it would give better results otherwise than we get with our chaff hives.—In regard to killing bees when putting on the covers, I replied to this in another column. We can not raise a Simplicity hive from the bottom-board, and put it back, without killing many bees, yet the Simplicity hive has the bottom edges narrowed down to almost a knife-edge, as you are probably aware. Whenever we raise the Simplicity hive from the bottom-board in warm weather, hundreds of bees immediately cover it on all sides. If it were as light as the cover, by taking pains we could induce them to get out of the way; but a hive full of combs always crushes more or less. Of course, it can be slid back and forth to open and close the entrance; but this propolis we have spoken so much about greatly hinders this operation, and requires the use of a long screw-driver as a lever very often to get the hive even started.

Perhaps no other apiary in the world of its size has bees handled as much as ours are handled, for we raise more queens than any other apiary in the world, if I am not mistaken. Well, I am glad to be able to say that we handle our bees without killing them, even if a man's time is worth more than the bee's life; and if any of the brethren or sisters can take out more queens and send them off in a day than we do, we shall be glad to see them, or have them call and see us. I thought of this when I read what some of the brethren said about the metal corners.—Friend H., GLEANINGS is not devoted *entirely* and *exclusively* to bees. If you look on the cover you will see "Peace on earth, good will toward men," standing out over and above the bee on the wing; and, God helping me, this little motto shall stand over and above all other things on earth so long as God gives me strength to manage business. Whenever I think "peace on earth, good will toward men," can be better enhanced by bees, strawberries, poultry, rabbits, or tobacco, I shall take them up

without being troubled. GLEANINGS has never lacked patronage since the Home Papers were started. In fact, the calls from almost all quarters of the earth on my strength and time have often seemed as if they would overwhelm me; and, may God be praised that I have been enabled to be of use to the brethren; and I thank him a thousand times more for the great privilege he has vouchsafed to me, of being enabled to lead at least a few souls toward the path of eternal life, than that he has prospered me in furthering the cause of bee culture. There are plenty of bee-journals that do not feel called upon to "mix things up," as some of the brethren are pleased to term it. Why not give them a lift, in place of finding fault with the way GLEANINGS is managed? I am sure I am glad to see them prosper; and sometimes, when I feel specially overburdened with a multitude of cares, I have felt as if I would gladly and willingly divide with them a portion of this great amount of business that needs doing by some one.

STORING EXTRACTED HONEY.

HOW SHALL WE MAKE A TANK OF SUFFICIENT CAPACITY TO HOLD A COUPLE OF TONS?

COULD you tell me, through your journal, how to build a honey-tank? A short article will do—one to hold two tons of honey. Don't put this in the waste-basket, as it is important. Decatur, Texas. JOSEPH ROSS.

A tank to hold two tons of honey would have to hold about 364 gallons, or as much as eight of the largest-sized barrels. Inasmuch as such a receptacle could not well be moved, I should advise putting the honey into cans or barrels; but if the circumstances are such that you really must have a two-ton tank, perhaps your cheapest way to make it would be like our wooden cisterns. In New Orleans all the water that is used is kept in these big tubs, or tanks, and they all stand on top of the ground. But, another thing comes in here: I think it is somewhat doubtful if honey can be stored any length of time in a wooden receptacle, without becoming tainted. Galvanized iron is also objectionable, because the acid of the honey dissolves the zinc. It may not be perceptible unless a little honey should be left standing some time over quite a surface of the galvanized iron. In that case it becomes poisonous, and I would not use galvanized iron for containing honey at all, not even for a honey-extractor. Now, then, what shall we use? I do not know of any thing better than a tank of wood lined with tin. Fasten the tin on to the wood with nails coated with tin, and then solder the heads fast to the tin, using nothing but rosin for doing the soldering. The rosin must then be cleaned off carefully, or that would taint the honey. I believe, my friend, before you get through you will conclude that a waxed barrel will be cheaper, and it is also ready for shipment when you want to ship. I might mention, by the way, that the nicest honey we have ever received from California, or anywhere else, comes in the

square tin cases, cased two in a box, each can holding about 60 lbs. Hadn't you better put your honey into these tin cases? If you want a tank to ripen it, however, I would make it of plank, and cover it with tin in the way I have suggested. Very likely some of the readers of GLEANINGS can give us some hints in this matter. I should like to hear from friends Wilkin, C. F. Muth, Poppleton, and others, who handle extracted honey in large quantities.

THE OTHER SIDE OF CALIFORNIA.

IS IT ADVISABLE TO PULL UP STAKES AND GO THERE?

FRIEND ROBT:—I wish to make a few remarks on friend Gallup's article, p. 236. I agree with him in all that he says, with the exception of the last paragraph of his letter. One might be led to think, from what he writes, that a person could make a living here, with a small capital and little or no work. I think that friend G. has done wrong in stating the matter as he did; and for fear that some may come here and be disappointed, I will give a few facts and figures.

California has been painted too much on the bright side, and the result has been that people have flocked here, only to find things different from what they expected. Being among strangers, in a strange land, they become homesick and disgusted, return east, and give California a bad name; whereas, had both sides of the view been presented for their consideration, and plain truths told them, they would have known what to expect, and have been better satisfied and contented upon their arrival here. If one wishes to come here for his health, I say come, as I think that this is the finest climate on earth; but if one comes here to make a living, I would advise him to come with more than \$500—yes, or twice that amount. And right here I will say that there is no place on the face of the earth where there are more days of *hard* work done in a year, than right here in California. Good fruit-land is worth from \$75 to \$200 dollars an acre, with no improvements; lumber, from \$35 to \$47 per M.; trees, each, apricot, 25 cts.; prune, 20 cts.; apple, 30 to 40 cts.; cherries, 40 cts.; oranges (budded), 50 cts. to \$1.00. Provisions are about the same as in the East; some few things are a little higher. Now let me ask, How much land, what kind of a house, how many trees, would \$500 pay for, to say nothing about the necessary tools, stock, and household goods, and a person's living until the orchard comes to bearing?

As to our big crops of honey, whether you brother bee-keepers across the Rockies believe them or not, they are facts; the following are from my report of 1885:

Mr. F., number of stands, 70	average per hive, 623 lbs.
" M., " " " 200	" " " 400 lbs.
" J., " " " 29	" " " 275 lbs.
" S., " " " 50	" " " 320 lbs.

But for all this, it is not all plain sailing here in keeping bees; it has its drawbacks as well as in the East. One trouble is, the "off years," when bees make no honey at all, and have to be fed or starve; and in the last few years these "off years" have become quite common; and then, foul brood is becoming the curse of this range of mountains (Sierra Madre). There are few apiaries that are not affect-

ed with this disease. Yet for all these drawbacks I would not take, as a gift, and attempt to keep bees, if one would give me the best apiary in the most favorable locality, east of the Rockies. The greatest trouble that I see is your cold winters. I do not believe it possible to winter bees successfully *every* time in such a cold locality, as bees will not live in confinement so long and be healthy.

Duarte, Cal., April 13, 1885.

W. W. Bliss.

HIBERNATION.

DO BEES HIBERNATE, OR DO THEY NOT?

DEAR MR. EDITOR:—Doubtless you have noticed the just flagellation which I receive from our good friend Clarke, in *A. B. J.*, Apr. 8. Of course, I ought to have said, "In my judgment, bees never hibernate." Let me add right here, that I do not plead guilty to all the harsh sayings I am credited with. I mean *always* to be courteous. Reporters at conventions must be brief, and so they often give our assertions a sharp twang that we are not responsible for.

Hibernation, I understand, to be like sleep, only far more profound and persistent. In this state, respiration is greatly reduced, the temperature falls nearly or quite to that of the surrounding air, the heart beats very feebly, and has power, through heightened irritability, to circulate impure or venous blood. The animal, when hibernating, takes no food; is torpid, and hard to arouse. In real hibernation there is no emission of fecal matter. Was not the fecal mass you saw in Mammoth Cave the droppings of bats in summer? Most insects do hibernate; indeed, so profoundly that all respiration and circulation are held in abeyance. Indeed, to answer your question in last GLEANINGS, I have had caterpillars frozen to the condition of an icicle, and yet, with warmth, revive and seem all right. De Geer, Reaumur, and Kirby, all record the same startling fact.

Now, how is it with our hive-bees? The organs of the mammals, in hibernation, are as cold, often, as the surrounding air. I have found, by putting a thermometer into the cluster, that in the case of bees the temperature will always range from 26° F. to 36° F. above the outside cold in winter. In severe weather there may be a difference of from 6½° to 86°. We thus see that the vital action of bees does not fade out, and, of course, the mainsprings of this action, the heart and respiratory organs, do not greatly lessen, or, much less, fade away. Bees also take food, are constantly changing their position, and are easily aroused. I do not believe that bees can be taken at any time, unless fatally or seriously chilled, and the cluster be broken, in a warm room, and they not show full activity. Therefore I repeat, I do not think that our bees hibernate. The great Kirby, of England, is in accord with this. He says bees do not hibernate (see *Ency. Brit.*, Vol. II., p. 787).

BACTERIA, ETC.

Please allow me to correct a statement in Mr. Heddon's excellent article, April 15, p. 270. "Prof. Cook thinks it (nitrogen) may be taken by consumption of bacteria by the bees." As will be seen by my own article, this is not my view at all. Either my hasty composition, or poor writing misled Mr. Heddon. There is no ground for such a be-

lief. The presence of bacteria makes the presence of nitrogen probable, if not absolutely certain. In this disease, diarrhoea, the bacteria seem always present, whether as a cause or simply as an attendant, I know not. The spores (bacterial seeds) are ever present. With the right conditions they germinate, and the bacteria and consequent putrefaction occur. Perhaps the bacteria cause all the trouble. Perhaps they find a suitable feeding-ground or breeding-place in the diarrhoeic matter of the intestines. A. J. Cook.

Lansing, Mich., April 18, 1885.

Friend Cook, if you will excuse my frankness, I do think you sometimes omit the phrase, "In my judgment," or "According to my experience." At the convention in Michigan I felt like protesting a little because you so flatly disputed friend Doolittle, although the proof you gave seemed satisfactory to me that he was wrong and you were right. In thinking of the matter since then, I have wondered whether the circumstances were not sometimes such that we are excusable for making positive statements. Some time ago a man came to see me, who had a patent on a hive, and the hive did not even embrace movable combs. He made some statements that were so very far out of the way that I flatly contradicted him, in the presence of many others. He suggested that *that was my opinion*. I told him there was no opinion about it; that what he had been telling was untrue, but that I did not know whether he uttered the untruth through purpose or through ignorance. I felt a little sorry I had spoken so, but the case seemed very aggravating. A few days afterward I was told that the man was *crazy*. Now, we who have been discussing this hibernation theory are none of us *crazy*; at least I *think* we are not (you see I am learning already to beware of being too positive). I have always felt sure, friend Cook, that you intended to imply "in your judgment," even though you neglected to say it.—Permit me to thank you for your explanation in regard to the droppings of the bats. It was a puzzle to me at once to see how they could accumulate guano, and hanging there apparently lifeless (until one took hold of them) for so many months in the year. I suggested that perhaps they were in full flesh when they go in in the fall; but your solution is doubtless the correct one.

By the way, can a thermometer be introduced into a cluster of bees without raising the temperature so as to spoil the experiment? I think I have broken clusters of bees, where they were not seriously chilled—in fact, not chilled at all to harm them—when they acted as if they were dead for as much as—I was going to say five minutes; but as I did not think to note the time at all, may be it was a much smaller portion of time. As I said before, they were tied up together in a hard knot, and it seemed as if it would pull their bodies to pieces to break this knot open before they were warmed up so that they could untangle themselves of their own accord. I should be inclined to think with friend Clarke, that bees sometimes go into a state that is about half hibernation.

A COVER FOR EXTRACTORS.

A SURE THING ON PREVENTING HONEY FROM FLYING OVER.

MY extractor was bought in 1874, and was a rather crude affair, judged by the "standard of excellence" which obtains at present. By strengthening some of the weak points it answered the purpose for several years; then a change from the "standard" to the L. frame necessitated a change in the internal arrangements of the extractor; and as those solid sheets of tin that were used in your first extractors had been denounced as the cause of honey flying over the top of the can, I made a new revolving frame after the manner of the latest style of constructing that article. I supposed that I would not again be troubled with threads of honey flying through the air to a distance of three or four feet in every direction, but the can was rather low for the L. frame; and when it came to thick honey, the annoyance was so great that I just stopped the machine, with the determination to let it stand till I could devise some way to stop the fine threads of honey from sailing over the top of the can.

Work in the apiary was pressing, and something must be done at once. With the view of providing a temporary bridge for the emergency, I borrowed a square of muslin from Mrs. R., took off the large cog-wheel, cut a slit in the center of the square of muslin, to let the small cog-wheel and the standard for the large wheel pass through. Now, when the muslin was drawn down nicely over the top of the can, with the small gear-wheel, and the standard on which the large wheel turns, projecting above the muslin, a twine string was drawn around under the iron hoop, over the muslin for half the distance, and then passed through holes punched in the muslin, and continued around under the muslin, and tied. When finished, one-half of my muslin cover was held securely in place by the twine while the other half was loose and could be opened and closed more quickly, perhaps, than any other kind of cover that has been used. The muslin prevents the current of air, and there is no honey thrown against the under side of it; and after using it several years I am so well satisfied with that plan of keeping all dust out of the can, and all the honey in it, that I would not willingly do without it or exchange it for any other kind of cover I have seen.

East Springfield, O.

R. M. REYNOLDS.

From your description, friend R., I presume the usual cloth cover we send out with our machines could be used in the same way, by making a hole in the center for the small gear-wheel to pass through. The cover will then need to be fastened with a cord, so that the rubber band may be drawn back, uncovering just half of the top of the can. This permits the combs to be put in and taken out, and is very quickly put back in place. None of the extractors we send out now are faulty in this respect, I believe; but those from other makers, and those we made some time ago, may be quickly fixed on the plan friend R. mentions. It seems to me it would be quite a hindrance, to be obliged to uncover part of the extractor, however, every time we lift out combs or put them back, and I should much prefer an extractor made so no cover of any kind would be necessary to keep the honey from flying over.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

PYRACANTHA, BEES, ETC., IN GEORGIA.

IN a recent issue of GLEANINGS you call for information as to the value of pyracantha for bees, etc. At Griffin, Ga., pyracantha grows to the height of from 8 to 12 feet, and flowers in profusion in the spring. It is much frequented by the bees, but I don't know whether it is for pollen or honey. I will watch more closely this spring, and ascertain. Pyracantha is a perfectly healthy bush, and makes the best hedge for the South. Our spring opened a month later than usual this year; and the result is, the bees have had a hard time. The apple is now in bloom, and every thing will now move off nicely.

Griffin, Ga., Apr. 21, 1885.

W. E. H. SEARCY.

BUYING OLD COMBS TO RENDER INTO WAX, ETC.

The farmers around here have lost much over half of their bees. Last year's swarms nearly all died. The principal cause is starvation. Only a few of the earlier swarms stored enough to live on.

I have recently learned a lesson. Experience taught it me in a way that I do not want it to do again. I bought up a lot of old comb to render into beeswax, paying from eight to ten cents per lb. for it. I found it lost two-thirds in rendering. That is, I paid about 30 cts. per lb. for it, besides the investment of time and labor, when I may not get 30 cts. for it.

DAMP CHAFF CUSHIONS.

My chaff cushions are covered on the under side with cloth. They will get wet and moldy sometimes from necessity. I can not take them off and dry them every time they get wet in the winter. Now, is that moldy or rotten chaff as good a non-conductor of heat as that which is dry and fresh?

Finally, I should like to put myself on record as one in hearty sympathy with your position on tobacco. Before I ever heard of GLEANINGS I was a temperance, prohibition, anti-tobaccoist, and it delights me exceedingly to find a journal, not specifically devoted to morals or religion, *sitting down* so hard on the weed, and all such dirty indulgences.

Mechanicsburg, Ill.

GEO. F. ROBBINS.

Thanks for your report about the wax, friend R. The question has come up several times, as to how much one could afford to pay for empty combs. We have tested several lots, and find it varies a good deal in the amount of wax yielded. New combs and cappings will give perhaps from $\frac{1}{2}$ to $\frac{3}{4}$ parts of wax; but old heavy combs often do not give more than $\frac{1}{4}$. Our plan is to decline purchasing, but tell the friends we will try out their old trash for a cent a pound, and sometimes the time spent makes it a losing business even then.—I am inclined to think the dampness is caused by the extra cloth covering on the under side. Since we have adopted the coarse burlap as a material for making chaff cushions, we have been much pleased to find the dampness pretty much all done away with. The idea is to get something as near like loose chaff as possible, and this burlap is so porous that the air goes right through it, drying out any moisture that may accumulate during severe zero weather. I should say that the moldy or rotten chaff would not answer at all.

WHAT THE PEOPLE SAY.

This beautiful April morning I feel in some respects as did Mr. Waldo, of Quincy, Ills.; not on account of my loss in bees, for I have succeeded in wintering two colonies out of three, while I know of some who have lost nearly their entire stock, but on account of the remarks of other people, such as, "What makes you fuss with your bees so much?" "you fuss with them so much they never will amount to any thing;" "they are a nuisance to you;" "you never will make any thing from them." And when I lose, which is quite frequently, they will say, "There, I told you so," and all such like remarks. Instead of helping a fellow by some word or suggestion, most of these remarks come from people who don't know a queen-bee from a blue-bottle fly. Perhaps you have traveled over about the same road that I am on now; if so, you know something how I feel. No one ever had a more genuine love for the business than I. I have been keeping bees eight years, and now have only two colonies, and have spent at least, for labor and material, \$150. If I must give up the business it will be with many misgivings. Probably this will find its way into the waste-basket. If so, of course that is the place for it. B. H. BRADLEY.

Eddyville, N. Y., April 17, 1885.

Friend B., may be some of these remarks come because you have been telling too much what you are *going* to do with the bees. Now, just stop telling, and go to *doing*. When they make such unkind remarks, reply pleasantly and mildly; own up that the business is somewhat risky, if need be, but let your acts speak instead of words, and by and by you will find that your neighbors are all standing by your side, and quoting you, and feeling proud of having so enterprising a man in their midst; that is, if you persevere until you become master of your chosen avocation.

He that tilleth his land shall have bread; but he that followeth vain persons is void of understanding.—Prov. 12: 11.

SAVING THE SEED FROM BORAGE.

How do you save the borage seed? Our bees have wintered well. I lost but one swarm out of 30, and they were smothered.

R. H. MILLER.

Akron, Iowa, April 9, 1885.

Friend M., it is a slow process, the best way you can fix it; for the seeds are ripening every day for a period of many weeks. The way we do is to take a large sieve, bend over the plants when the seed is ready to jar out easily, then strike the plant with a little stick or paddle. The size of meshes of the sieve should be such as to let dust and rubbish pass through, but not the borage seed. When you have been clear over your borage patch, take another sieve that will just permit the seed to pass through, then you will have it tolerably clean. Passing it through a fanning-mill afterward, however, will make it still better. I know this is some trouble, but it is the only way to manage with seeds that ripen day after day for a long while, like borage, spider flower, Simpson, and most of our honey-plants. The difficulty of gathering them is one reason why many of these seeds can not be furnished at a lower price.

SAD AND SUDDEN DEATH OF ONE OF OUR BEE-FRIENDS.

I was called yesterday to look at the apiary of J. H. Struberger. You know him somewhat, as he has been taking GLEANINGS, and trading with you. By the way, you may not have heard of his sad death. He was returning from New Orleans, about three weeks ago; and in crossing the Ohio River at Evansville, Indiana, in passing from the transfer-boat to the tug-boat, he fell overboard, and not even his body has been found up to date. He was one of our best citizens, having many ennobling qualities. El Dara, Ill., April 2, 1885. T. C. BUNKER.

We are very much pained to receive the above news, friend B.; but I have given it here because a caution is needed to those who are not much accustomed to traveling. Do not incur risks. There is rarely a case where plenty of time is not afforded to get on or off from boats or trains. Wait until the proper time comes, and be careful how you step, or what you do. Many lives are lost because people get restless and uneasy in traveling. They get out on the platform, or get off at stations, simply for curiosity. Better keep your place, and move with the crowd, in an orderly and careful manner. I was not aware that people are often lost in the way you mention, so that not even the body can be recovered.

WOOD VS. TIN FOR SEPARATORS: ARE WIDE FRAMES TO BE LAID ON THE SHELF?

Before stating a few facts I wish to say I have great faith in A. I. Root. I believe he will publish any thing he thinks is for the interest of bee-keepers, even though his sales should be greatly lessened thereby. It does seem a pity that so many tons of tin are sold for separators, money wasted, when (fact No. 1) there are bee-men in this county who have raised comb honey for 10 or 15 years, keeping from 100 to 200 stands, who would not use tin for separators if it were furnished free of charge; they like wooden ones better. Another fact. Just now when the Heddon system is all the rage, and wide frames are to be laid on the shelf, it has been demonstrated in this county, by two years' experience, that a hive using wide frames will average double the honey to the hive, right through the apiary, that a hive will using the rack on top.

Bees have wintered all right where taken care of and fed. I have lost and doubled down to 125 from 160. This is the first time I have worried the editor of a bee-journal, and perhaps the last.

15—F. J. FARR, L5—160.

Buckner, Mo., April 8, 1885.

Friend F., you will never weary the editor by giving him plain facts from experience, like the above you have stated. Our experience with wooden separators, however, seems to be just the other way from what you state it; but perhaps ours were not made right. Although we have advertised wooden separators for some time, our customers seem to prefer tin to any thing else, and this year is no exception to the years that are past. I am inclined to think a good colony will usually store more honey in wide frames than with any arrangement we have yet had in the way of crates or cases. The extra trouble of handling wide frames, however, may more than make up the difference.

A SUGGESTION IN REGARD TO HAVING THE MOORE OR HEDDON CASES SO MADE THAT SEPARATORS MAY BE USED.

I would suggest an improvement in the Moore's crate, so that it can be used with separators. Instead of making the ends and partitions in one piece, have a piece an inch or $\frac{3}{4}$ wide, to which fasten the tin and a piece $\frac{1}{2}$ inch wide, even with the top to stiffen the rack, and hold sections square. A separator 2 $\frac{1}{4}$ inches wide can then be used between each row of sections. I have made some racks like the above, and think they will answer my purpose better than any thing I have seen.

In reading the article on wide-top brood-frames, by Alley, I think, the following idea came into my head, and I should like to have your opinion of it. Would not a strip of tin 1 $\frac{1}{2}$ inches wide, tacked on the top of the brood-frames, prevent brace-combs up to the rack, and at the same time leave each frame loose?

P. A. GARRETTSON, 28—35.

Hillsborough, N. J., Apr. 7, 1885.

Friend G., your suggestion is ingenious, and is to me a new thought. I presume you mean that the upper strips should be made movable, although you do not say so. It would be a little more work to make and to handle them; but the separators would go in nicely. There would be one trouble if sections were to be removed as fast as filled: The bees would get over into these spaces between the sections, and could not be got out without some care and trouble in replacing. In these spaces they would probably be imprisoned, and starve to death. The loss might not be great; but I should never want to close a hive, knowing that I had left a single bee in that predicament. Tacking thin pieces of wood temporarily to the top-bar of a brood-frame is an idea that was experimented on and reported in the *A. B. J.* as much as fifteen years ago. I believe it did not give very good satisfaction, though tin bars might succeed better; but I think it would be a good deal of machinery and bother.

FIVE SWARMS IN SUCCESSION FROM A SINGLE HIVE.

I have one hive of bees that have sent out five swarms since March 1st; the four last swarms came out in succession, one each day. James H. White, of this place, says that he has never heard of such a thing before, and that he doubts their having queens. What do you think of it? They seem to be working all right. The first swarms have made combs.

GEO. CLEVELAND.

Rockledge, Fla., March 20, 1885.

Friend C., my explanation of this matter would be, that the old queen was lost by some means, and a lot of young queens were raised. Instead of the first ones destroying the rest of the cells, a lot of them got loose at once, as sometimes happens; then came secession and dividing up. Do you not find that it is a week or two before any of these swarms have eggs in their combs?

CHAFF HIVES NOT BEHIND SIMPLICITY HIVES, AFTER ALL.

In your answer to my letter in *GLEANINGS* of April 1 you were surprised at loss of bees in chaff hives, while none were lost in Simplicity hives up to date. In justice to the chaff hive, I would like to add, that the bees in Simplicity hives all died in the

following severe weather of March. I found, upon examination, their stores were much the better—which accounts for their holding out longer. I have five swarms left in chaff hives.

LaGrange, O., Apr. 15, 1885. E. F. WILCOX, 35—5.

Friend W., I am not glad to hear that you lost the bees afterward, in Simplicity hives, but I felt pretty sure there was some reason for this apparent difference. From the way in which you speak of stores, we might infer that the trouble was not in the severity of the winter, but in the lack of stores. Now, suppose you had fed them up until sealed stores of sugar syrup were all around the cluster, as I have told you; namely, behind and before, on the right and on the left, and overhead and under foot; that is the way I like to see bees provisioned. When they are fixed that way, my experience has been that they get along a good deal better than where there is a good heavy comb off at one side, or several pounds of honey in the further corner.

REPORT FOR THIS LOCALITY.

One man had 11 colonies, and lost all; another 10, lost all but two; another 14, lost all but one; another 1, and had 5 left three weeks ago, but thought it rather doubtful, as they were so weak, about getting through at all; another man living right near here had 16, fall count; and some in chaff hives had, the first of this month, only two left, and those very weak and feeble.

Some time ago I spoke of having dragged out a queen from under a hive. I took it to be one, at least, and took it with a worker-bee to a very prominent bee-man of our county for examination, and he pronounced it a queen at first sight. It was shriveled up considerably, is what bothered me; so after writing to you it stayed so cold I thought it useless to think of getting a queen in time to save them, and the 24th day of March I drew the hive out of winter quarters for the purpose of distributing among the others, and, on taking out the second frame, I discovered young bees; and on the fourth frame, eggs and larvæ, of a fine hybrid queen, which gladly surprised me. Now, there is a mystery somewhere.

E. B. HAUGHEY.

Pearson, Fayette Co., O., April 13.

No mystery at all, friend P. The hive you mention had two queens, a young one and an old one. The old one died, and you had the young one left. When she was fertilized last fall she met a common drone, and therefore the brood will be hybrids.

APIS DORSATA; A SWARM CAPTURED AT LAST.

As a postscript to my last letter on *A. dorsata*, I have the pleasure to inform you that I have at last captured a swarm, and have it safely hived in an observatory hive. There are about half a bushel of bees, and are they not magnificent fellows? My hive is about 6 feet tall, and 3×3 wide and deep. The bees were secured on a very high tree, on which were 13 other swarms. The limb was cut off, and forms the top-bar for the brood, and hangs like a Simplicity frame in the hive. I have had a sheet of glass, 9×16 inches, put into the back of the hive, and a door made to shut all up, when one does not want to watch them. The brood-comb is about 14×16 in., and is solid with brood. I see no pollen or honey in the comb. There are young bees and

old. The old have the abdomen a bright yellow, with narrow black bands, while the young (?) are much darker in color. But I can not speak with much certainty, for I have not studied them long enough yet. They sting, but the sting is not much worse than that of the *A. Indica*—at least I judge so; in putting them into place, my assistant was stung four times, but it was not followed by swelling. The sting is much larger than the common bee, of course; and as one of my Karens said last night, "It makes a hole at once." Yet I judge that it is bearable.

Their wings are beautifully iridescent; and looking at them on their comb by night, with a strong light, they are most beautiful. This morning they are going out and in their hive, and looking all about their home. Will they stay and go to work or not? is the question; we shall see. I have saved some of the dead ones to send to you when they are dry; and as I learn more about them I hope to have something of interest and use to report.

One thing I notice. They are far less excitable than *A. Indica*. They move slowly, do not dash about their cage, and struggle for exit like that bee. They impress one, however, with an idea of "reserve power," if they have a mind to use it. I do not think they are quick on their combs to repair damage, but can not yet speak with definiteness. I wish this swarm were safe in your apiary. I also have a swarm of the "*melipona*" working well.

Toungoo, Burmah, Mar. 7, 1885. A. BUNKER.

MORE ABOUT THE WILLOW HERB.

For two years I have noticed my Italians working on the willow-herb, or purple fireweed. It is beginning to grow in profusion here, and I have several times been on the point of sending off a sample, for name; but your description of it, on page 48 of GLEANINGS, is too clear to leave room for doubt as to its identity. We live near the summit of the Allegheny Mountains, 1400 feet above sea-level, in the pine and hemlock regions; and as the timber is being cut very fast for logs and tanbark, the fire overruns the hills every year or two, and both species of fireweed grow abundantly, and both yield honey, as I am informed; but the purple is the only one on which I have noticed the bees working; and, by the way the bees "take" to it, and the length of time it is in bloom, it must rank next to white clover here as a honey-plant, and our honey is of excellent quality. It has the peculiarity of sending up a flower-stem, which begins to bloom at the base, and frequently the lower seed-pods are in "cotton" with matured seed, while the flowers at the top are just opening, which makes the honey-flow of long duration. I have kept bees but two years, so I suppose I belong to the A B C class. I got of comb honey, 400 lbs. ABEL GRESH, 7-26.

Weedville, Pa., Jan. 29, 1885.

CONCERNING DEAD OR TORPID BEES.

The other day I found a colony that had been breeding rapidly, and had exhausted their stores, and several cold stormy days had prevented me from supplying their need. They stood thick on three or four frames, all apparently defunct. Holding up a frame to look more closely I breathed on them, and saw a faint tremor of wings and legs. Near by was a queenless colony with a few workers and drones, small dark fellows whose heads I had pinched off a short time before. I got these orphans

on two combs, and put them between the dead ones. The queen fell on top of the frames, and the live bees rushed up astonished.

Take her up tenderly,
Lift her with care,
Fashioned so slenderly,
Young and so fair.

Well, they warmed her up and fed her, and resuscitated all her family—twice their number. Query—Will a queen that has been starved and chilled produce any thing but drones hereafter? I believe the authorities say she will produce only drones.

D. F. SAVAGE.

Casky, Ky., March 30, 1885.

Friend S., your queen will, without doubt, be just as good as she ever was. We have resuscitated a great many in the same predicament, and never found them drone-layers, although more severe freezing might perhaps have that effect.

CELLAR WINTERING.

I came out last spring with 15 swarms; lost 33; 8 of the 15 were good swarms; increased to 34; got about 20 lbs. surplus to the hive. Last year was a poor one up here. I fed a few swarms up on sugar; put them in the cellar the 20th of Nov.; my cellar I built last fall on purpose for bees, under my house. It is very dry, but still there seems to be something wrong with my bees. All through December, up to the 15th of January, they were noisy. They would crawl out and drop on the floor, and die. The ground was covered in front of the hives. When I put them in I raised them off the bottom-board one inch. The 15th of January I let them down on the bottom-board, and shoved the hive back, so there was an opening on the back. Since then they have been quiet, and but few bees dying. I examined them to-day, the 17th of February. There seem to be plenty of bees, and not a damp or moldy comb. The glass stands 36° in the coldest weather, and moderate weather 40°. Now, what was the trouble? Will some one tell me through GLEANINGS? I have been a bee-keeper for 30 years, and thought I knew as much as any man, but find I can learn something yet.

L. REED.

Orono, Mich., Feb. 17, 1885.

Friend R., I am inclined to think your bees were too warm when they were so noisy. I do not believe letting them down on the bottom-board, and pushing them back, made any material difference. When the weather became cold, your cellar probably got colder, and this was what made them quiet.

A SOURCE OF PLEASURE IF NOT OF PROFIT.

I am a shingle sawyer, in a mill in the north pine woods of Michigan. Four years ago I bought a swarm of bees in their natural home, a large pine-tree. The next year I had five swarms from them; but being inexperienced I have not yet derived much profit from them; still they have been to me a constant pleasure. Though being in a mill at work, I am very anxious to learn how to prevent natural swarming.

I began this year to take the *Apiculturist*, and sent you for a sample copy of GLEANINGS, thinking to try it for six months. Upon receipt of it I read the article entitled, "The Michigan State Convention; What I Saw and Learned," and decided at once to take it.

C. F. JOHNSON.

Deer Lake, Mich., Feb. 2, 1885.

ARTIFICIAL COMB HONEY.

The Philadelphia *Farm and Garden* calls their April No. their annual strawberry number, and a grand good number it is; but one of the best things in it is an editorial, hitting a blow at just what we have been writing on for two months past. See what you think of it:

Our vocabulary has no words strong enough to condemn in fit language such "scientific pleasantries" as the one which appeared lately in the *New York Mail and Express*, and has since been going the rounds through the American press. The article is given prominence by the flaring headlines: "Human Ingenuity to do away with the Work of the Bees," and describes an imaginary and utterly impossible method of manufacturing comb honey artificially, altogether without help of the bees. While American bee-keepers have been and are still working earnestly to find a market for their produce, while even now the purest extracted honey goes begging in our city markets on account of the glucose scare, the great city papers try to make all these efforts come to naught, and to make the consumer afraid of the most natural, most delicious, and most wholesome sweet, in the shape of comb honey.

This so-called scientific pleasantry is nothing but a willful and malicious lie, and one which strikes a fatal blow at the interests of the American bee-keeper. The great newspapers refuse to yield to the demands of interested parties for a proper correction. The damage seems to be well-nigh irreparable, for the agricultural press does not reach the honey-consumer in the cities, among whom a press so hostile to agricultural interests chiefly circulates.

Let us say, however, that both the inventor and publisher of such infernal lies deserve a good long term of free board and lodging in the penitentiary.

REPORTS DISCOURAGING.

SHALL HE GIVE UP?

MY subscription to GLEANINGS has run out, and so have my bees; and I am in doubt whether to have any thing more to do with either. A year ago I lost 30 colonies, but had 20 left; and although they were very weak I got about 700 lbs. comb honey, and increased to 30 colonies. I put them in the cellar with ten frames of honey to the hive. I filled the half-story cap with fine shavings, and tacked sack cloth over, and put on the hive with the oil cloth removed. I put 15 in a wing cellar, and 15 in a cellar under the wood-house, both shut off from the middle cellar. I did this because I thought I kept them too warm the winter before; but this winter has been so very cold that I presume the temperature in the wood-house cellar was down to 0 for six weeks at one time, and that under the wing not much above it. Well, the bees are all dead, and most of the honey left, and which is molded slightly in a few hives.

I think I shall not give up entirely, but get a swarm or two and try again on a small scale. I began with two swarms, which increased to fifty in three years, and I spent considerable on Italian queens, etc., but they are all gone now.

Stevens Point, Wis., Apr. 21, 1885.

GEO. H. PATCH.

Friend P., your bees were no doubt worse off in that cellar than they would have been outdoors, and this is one great reason why I have been so loth to advise wintering. The temperature of your cellar went down to zero, you say. Well, the tendency of the cellar then was to keep the bees at zero when they would have been warmed up a great many times if outside. The same way we

often find frost even now under heavy mulch. During the severe weather it froze down to a great depth, and the mulch, or protection, has had the effect of keeping or prolonging the excessively low temperature. Chaff hives, you will notice, may let the temperature go down to zero, or even below it; but they also permit it to rise, when the surrounding air rises, in a comparatively short space of time.

LOSS ON ACCOUNT OF HONEY-DEW.

The loss in bees through this section the past winter is the heaviest that has ever been known—fully 95 per cent. Cause, no good honey last season after June, hence the region of the brood-chamber was supplied late in the season with an unusual amount of pollen and a small supply of bug-juice. Bees that were fed in the fall on sugar or good honey have wintered well.

R. B. ROBBINS.

Bloomdale, Wood Co., Ohio, Apr. 1, 1885.

ONLY 2 LEFT OUT OF 53, CAREFULLY PUT UP FOR WINTER.

Last season I increased to 60 colonies; but as we had almost a total failure of honey I had to double back to 53 in the fall. I fed 15 colonies 150 lbs. granulated-sugar syrup. I put a Heddon case on the top of each hive, filled with dry forest-leaves, and left them on the summer stands. Now for the result:

Out of the 53 thus prepared I have just *two* weak colonies left! Surely I am ready to go into Blasted Hopes. No, *don't* put me there, for I am going to "try again." I have the hives, combs, etc., and I propose to get some bees by the pound, and stock up again. I find sealed brood in nearly all the hives, the eggs evidently laid during a warm day or two we had about the 7th or 8th of Jan. This divided the cluster, and caused the bees to spread over the patches of brood, and thus they perished with the long protracted cold that followed; but, what induced the queen to lay so early in the winter? Was it because the honey of last season was miserably poor stuff, gathered from grapes, some rotten apples, and unusually mixed with pollen? It was so pollenized as to be, much of it, absolutely bitter; much of it was watery and sour. Most of my colonies had diarrhoea badly; some had 25 to 30 lbs. of honey left.

At the meeting of our N. Kansas Bee-keepers' Association, held April 3, the reports were gloomy enough, one or two exceptions, and those were in favor of the *cellar*. I think that the losses in this region will not fall any short of 90 per cent. Some have lost all; most have only one or two colonies left.

J. W. MARGRAVE.

Hiawatha, Kansas, April 17, 1884.

ONLY 21 LEFT OUT OF 80.

I think that fully three-fourths of the bees in this county are dead. I had 80 stands last fall; now have 21 left, many of those with only a handful of bees in a hive. Many I hear of have lost every swarm. Ellwood Spencer, a neighbor, has 15 left out of 80 last fall. I wintered 46 of mine on their summer stands in Langstroth and Simplicity hives; 9 out of the 46 are yet alive; 34 I had in a cave, and 15 of those are alive. Most of those that died in the cave starved to death, while those on their summer stands left plenty of honey.

S. L. SHERMAN.

Oskaloosa, Iowa, April 7, 1885.

REPORTS ENCOURAGING.

WINTERING IN A SIMPLICITY HIVE WITH NOTHING BUT A MAT OVER THE FRAMES.

THE past winter reminds me of the winter of 1880. I hear of heavy losses of bees all around in my vicinity. I have not lost any except one four-framed nucleus. The greater portion of my 54 colonies are in excellent condition—just booming with bees. I had one colony that wintered in a Simplicity hive with nothing over the frames but one of your basswood mats and the hive-cover. I was afraid to examine them, for I was almost sure that I should find them dead. You may imagine my agreeable surprise to find them in good condition. The queen is a large, prolific, full-blooded Italian; and her workers, large, hardy, and good honey-gatherers. They were on 9 "slabs" of white-clover honey that they stored away themselves. This is pretty good evidence, I think, that bees will not freeze, but still I think it pays to give the little fellows proper protection; and after five years' experience with Root chaff hives I consider them the best hive for both winter and summer use. I always find bees all right in chaff hives; combs dry, and hive nice and clean.

J. P. MOORE, 54-55.

Morgan, Ky., Apr. 14, 1885.

Friend M., my opinion is that your bees in the Simplicity hive were so strong and healthy, and so full of good wholesome stores, that they came out all right *in spite* of bad protection.

A GOOD REPORT FROM OREGON.

Apr. 5 we had one swarm come off, and a big one too; yesterday two more came off, and all our stands are very strong, with lots of new honey. Think of it, over 600 miles north of Chicago, and surplus honey in March! "Busy bees" haven't lost an hour on account of weather since March 1st. We have some very fine apple-bloom honey, sections complete, and now white clover is coming out fine; look out for astonishing reports. No feeding has been done, none needed. Of course this is not usual, as we have generally to complain of considerable moisture in March.

CHAS. LEE.

Portland, Oregon, April 8, 1885.

MY RECORD FOR 1884, FROM 11 TO 40, AND 1620 LBS. OF HONEY.

Spring, 14 colonies; honey, comb, 450 lbs.; extracted, 1170 lbs.; fall, 40 colonies, five nuclei, 1885. Spring, 40 colonies, four nuclei. How does that look? No Blasted Hopes there. E. B. CRANE.

New Canaan, Conn., Apr. 13, 1885.

275½ LBS. OF HONEY FROM 22 STOCKS.

The year 1884 was an unusually good season with me for honey; from 22 stocks, spring count, I took 2450 lbs. in comb honey, and about 300 of extracted, mostly sold, averaging about 16½c. My bees are all in tiptop condition to date, notwithstanding they have had access to plenty of pollen. This is the fourth season I have packed them on summer stands without regard to pollen (but a good supply of early-made honey), and have never lost a stock, or had any signs of dysentery in my yard. I get most of my swarms in May; pollen is no terror with me, providing I have the other requisite.

C. L. BOSTWICK.

Sandy Hook, Conn., March 28, 1885.

ONLY ONE LOST OUT OF 121 IN WINTERING.

We take pleasure in sending in our report this spring. Cellared 120 colonies, Nov. 17, 1884; finished setting them out, Apr. 15, 1885. One dead in cellar, one swarmed out since setting them out (queenless); perhaps there are six to ten that will have to be helped some, as they are rather weak; the rest are in nice shape, except they may need feeding some on account of no fall run of honey last season.

D. E. L'HOMMEDIEU & BRO., 905-120-5000, Colo., Ia., April 19, 1885.

P. S.—5000 stands for the surplus taken in 1884.

ONLY 2 LOST OUT OF 80.

Our bees have wintered well; lost only 2 out of 80. Bees have been gathering pollen for the past two weeks, and are building up very fast. I think we have done very well, considering the losses of the older bee-keepers.

WM. M. ROSS.

Lebanon, Ills., Apr. 10, 1885.

A GOOD REPORT FROM CAVE WINTERING.

I put 55 stands of bees in a cave the 1st of December, and took them out the 1st of April. Two were weak when put in, and should have been united when put up. They went up. The mice destroyed the rest; all came out right. Experience has taught me that plenty of ventilation is the one thing necessary to successful wintering in caves. I have a 4-inch chimney in the roof of my cave, and last fall I put a 4×4-inch tube, 16 feet long, below the freezing-point down in the ground, and brought it into the cave at the bottom at one corner, and during the very cold weather I put an oil-stove in the cave and kept the temperature at from 40 to 45°. I never had bees winter better than last winter. The cave is in a sandbank, nice and dry.

JAS. H. BROWN.

Cherokee, Iowa, April 7, 1885.

ONLY 3 LOST OUT OF 130.

On the 20th of Nov., 1884, I put 130 colonies into my cellar. On the 5th of Apr., 1885, I carried out 127 live colonies. At the present date there are 10 colonies that are weak, the rest very good. I packed 9 colonies in chaff, on summer stands, 5 of which are dead. The rest are fair colonies. Yesterday it was 25° in the shade at 7 A.M., and froze all day. To day we have a furious snowstorm, with no sign of improvement. Not very encouraging weather for bee-keepers.

W. ADDENBROOKE.

North Prairie, Wis., Apr. 14, 1885.

THE SYRIANS AHEAD.

My report for 1884 is small. I lost all my black colonies but one, and sold that. One colony of Syrians increased to 5, and gave 30 lbs. of honey. I should have tried for more honey and less increase, if I had been at home.

E. L. TARELL.

Presque Isle, Me., March, 1885.

FROM ONE TO FIVE, AND 50 LBS. OF HONEY.

I bought one colony in Nov., 1883; increased to 5; got 50 lbs. of comb honey. They are all alive at this date. I have them packed in chaff. This winter has almost cleared this neighborhood of bees.

Howells, Mich., Apr., 1885. DILLAN GEORGE.

LESS THAN 5 PER CENT LOST IN AN APIARY OF 175 COLONIES.

Bees have wintered splendidly; less than 5 per cent out of about 175 colonies; about one-third in chaff hives, the rest in single-walled hives; all wintered out of doors. I can see but little or no difference in the results of the different hives; all

had chaff cushions, but none had chaff-cushion division-boards. Those that died, died of starvation; but the prospects are not very promising for a good honey yield for the coming season, as the clover is badly killed out in many places.

Centerville, O.

G. W. LAWSON.

I would not be in haste to borrow trouble. friend L., for the clover sometimes catches up wonderfully, under the influence of favorable weather.

FROM 4 TO 11, AND 145 LBS. OF HONEY, ETC.

I began the spring of 1884 with 4 colonies; increased by natural swarming to 11, and took 145 lbs. comb honey. Now a question: Do bees raise bees all winter, even when it is freezing cold? On the 26th of February I found 6 fresh young white-winged bees in front of one hive, that being about the second day that was warm enough for them to fly for about a month. They carry pollen into every hive now when it is warm enough. J. S. DANIEL.

Siloam Springs, Ark., March 8, 1885.

Bees do raise brood every month in the year, even away up here amid our frosts and snows, friend D.; that is, they do occasionally. Most colonies will, however, have but little brood during December; but in January and February, almost all strong colonies contain more or less.

ONLY ONE DEAD OUT OF 73.

Out of 73 colonies left on summer stands, packed with straw and chaff, one has died. The rest seem to be in pretty fair condition, as they seem to want to rob one another pretty lively, while all defend themselves well. The neighbors report some all dead, and some about three-fourths, and others one-half dead, while some think the survivors will perish on account of not having enough honey to build up on. While the cold weather still stays with us, having a snow this morning two inches deep, not much prospect for a very early spring.

Lima, Ill., March 21, 1885. J. A. THORNTON.

FROM 4 TO 13, AND 300 LBS. OF HONEY.

Here is my report for 1884: Spring count, 4 hives; increased to 13 by natural swarming, and got 300 lbs. comb honey. I took GLEANINGS last year, and have the A B C book, and I like them very much.

F. B. STEPHENSON.

Deep Water, W. Va., Feb. 17, 1885.

FROM 6 TO 10, AND 120 LBS. OF HONEY.

We commenced last spring with six stands of bees; increased to ten, which are all alive at present, and got 120 lbs. of comb honey, surplus. The honey season was cut short by the extreme drought.

F. C. THOMAS.

Spring Valley, Ohio, March 17, 1885.

ONLY ONE LOST OUT OF 24.

In the last issue of GLEANINGS I notice many discouraging reports, especially to beginners; but I shall take fresh courage, and go ahead. I started in last spring with 14 colonies in hives of my own make, movable frames, no name for them. I increased by natural swarming to 30; united to 24; came out this spring with 23, some dead bees in each colony. Through the coldest weather in January and February I kept them covered with snow, head and ears—no other protection, except quilts over the frames. I will try to do better next winter.

Please tell me how to save comb from the moth during summer, as I can get all the comb I want

from my neighbors who have lost their bees. I can buy all the bees I want for \$1.00 to \$1.50 per colony, in box hives.

E. FARABEE.

Tina, Carroll Co., Mo., Apr., 1885.

Friend F., shut your combs up in a tight box or tight room, where the moth can not get at them, and there will not be any trouble in keeping them over summer. See Bee Moth in the A B C book.

A GOOD REPORT FROM FRIEND PEIRCE.

Nov., 1884, 46 colonies; Apr. 20, 1885, 42, and better filled with bees than any previous spring—chaff hives, sack of dry soft shavings over the frames, front entrance of the hives all open. The 4 dead colonies were full of bees, but starved. I am ashamed to write it.

J. H. PEIRCE.

Dayton, Ohio, April 20, 1885.

ONLY ONE LOST OUT OF 33; SAVED BY NEGLECT.

Contrary to expectation, my bees have wintered well, having lost but one out of 33 last fall, and that one was queenless. My bees were not prepared at all for winter, on account of my absence from home when they should have been cared for, and my inability from rheumatism and heart disease after getting home. They were all just as left, about the first of July. Some had wide frames with section boxes in the upper story (chaff hive) and some were full of L. frames above, with nothing but roof of hive above the frames, and others were partly full above, and some with cushions or honey-board above brood-nest, and all did equally well, as far as I can see. Some had the upper story full of sealed honey, and some not very much. It was very dry last fall, and I expected the bees around here would die of old age. Many did; but mine were saved by neglect.

T. F. WILSON.

Milan, Ind., April 12, 1885.

Friend W., it does seem as if your bees lived in spite of their want of care; but I guess the truth is, they had an abundance of good wholesome stores; and when this is the case they will stand almost any kind of ventilation.

MRS. LUCINDA HARRISON'S REPORT.

We commenced to carry our bees from the cellar April 1, and they are now all on their summer stands. I've not examined them yet, but, judging from their flight, they are generally in good condition. It is cool to-day, as there was a hard freeze last night, which formed thick ice. Bees carried in pollen on the 4th and 5th of April, for the first time this season.

BEES UNITING IN THE CELLAR OR BEE-HOUSES.

Do bees ever unite in the cellar? Our bees had on Hill's device, covered with a muslin sheet and comforter, and piled one upon another with intervening sticks. A few hives had no bees; and in every instance the hive beneath was running over with bees, appearing as if they had moved into one hive.

Mrs. L. HARRISON.

Peoria, Ill., April 8, 1885.

Yes, my friend, they will unite very often when the hives are too close together, and a broad entrance permits them to pass to and fro. You will have all your bees left, but are usually minus a queen. If you examine these overpopulous colonies as soon as taken out, however, you will oftentimes find both queens alive; and by promptly dividing a colony you will be all right again.

TERRY'S BUSHEL BOXES.

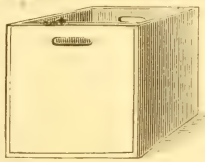
BOXES VS. BASKETS.

FOR a long time I have been thinking that we ought to have something more accurate than a bushel basket—more substantial, and less expensive. Baskets do not fit up tight together in a wagon; they won't bear piling one on top of the other, and they cost more than a good stout box. When I read the proof of friend Terry's potato-book I was greatly surprised to think he had been following my own notions so fully. The following is the chapter in regard to these boxes:

THE USE OF BUSHEL BOXES.

For several years I have been using bushel boxes for marketing early potatoes, while the skins slip, and for handling the crop in the field all through the season. This is one of the ways in which the potato-specialist can get ahead of the small raiser. I think we handle our crop for less than half of what it used to cost us before we got these boxes made.

Our boxes are 13 inches by 16, and 13 deep, all inside measures. They were made a little deeper, to allow for shrinkage. The sides and bottoms are made of $\frac{1}{2}$ stuff, and the ends of $\frac{3}{4}$. Hand-holes are cut in the ends as shown in the cut.



TERRY'S BUSHEL BOX.

The upper corners are bound with galvanized hoop iron to make them strong. The price paid for them was from \$25.00 to \$30.00 a hundred at a box-factory. The wood used is mostly whitewood. Some light wood should be used, of course, so as to make them as light as possible. They need not weigh more than six or seven pounds. Early in the season, while the skins slip, our potatoes are dug and laid (not thrown) into these boxes, and the boxes are covered as fast as filled. They are then safe from sun and rain till wanted for market. The covers are simple pieces of boards cut about 15 by 18 inches. Dig one day and taken to market the next, and set off in the boxes at the grocer's, and then set by him into his delivery wagon and taken to his customers, the consumer gets them just as nice and fresh as though he raised them himself. I recollect once leaving 30 boxes at a grocer's while I went on with the rest of my load to another place. When I came back he had delivered every bushel to his customers, who had orders in for them. They were dug in the afternoon, immediately covered, and by 11 o'clock the next day they were in the consumer's cellar, without any handling or bruising, and I will warrant they gave satisfaction. There is plenty of demand for nice things at paying prices, while ordinary goods are dull at low prices. Some buyers, I know, or shippers, do not seem to appreciate nice potatoes, carefully handled; but our best city grocers are generally on the lookout for the best, and are willing to pay for it. Of course, these boxes filled with potatoes should be carried on a spring wagon, and covered by canvas from sun and rain. The sized box spoken of is just right to set in an ordinary three-foot-wide wagon-box, as two boxes endwise just fill across the wagon-box. The box on my spring wagon is a little over 12 feet long, so 20 boxes can be set in the bottom, and two deep makes 40, our usual load for two horses. But they can be set three or four deep, if desired. The boxes hold a bushel level full, so they can be set one top of the other. Do not round them up, or you will cheat yourself. They hold a full bushel when a straight-edge drawn across the top just touches the potatoes. With plenty of these boxes, my men can dig right along while I am going to market, and I can load up any time in fifteen minutes. There is some dead weight to carry, but it pays twice over. The potatoes are in the nicest possible shape, and your customers will soon find it out, and there is no chance for quibbling about measure. There is just a bushel in a box every time, while baskets vary in size, and can easily be

heaped up too much or too little, thus giving a chance for unpleasant words between buyer and seller. Later in the season, after the potatoes are ripe, and there is no longer any need of handling them so carefully, I drive through the field, and two men will empty 50 or 60 boxes into my wagon in a very few minutes, and the boxes are left ready to be filled again. When picking up we do not need to have a team and wagon in the field; they can be going to market, or at other work. When there is a good crop, a box can be filled almost without moving it; thus all unnecessary lifting and carrying are avoided. Last fall we wished to dig one six-acre piece and pile them close to one edge of the field, so we could plow the land. The boxes were scattered through the field, and, when filled, were set into the wagon and drawn to the place where we wished to pile them, and emptied out, 50 bushels in a pile. A gentleman from New London was here, and rode with me on the seat while two men handled the boxes. He was much surprised to see how short work we made of clearing off an acre. There is a great difference in the amount of labor as compared with the ordinary method of handling. Really, I do not mind the raising and handling of 24 acres of potatoes now, with every possible device that Yankee ingenuity can invent to save work, as much as I used to the raising of six acres a few years ago. When we want to put the crop into the cellar we manage the same way as when piling, except that the boxes are emptied on to a shoot in the cellar window. When a car is to be loaded right from the field, these boxes come handy also. We can get a carload dug beforehand, and have them all in the boxes and wagons, so the car can be loaded in a day. We do not have to stop to pick them up out of piles, and thus a very unpleasant as well as slow job is avoided.

At the end of the season, when the boxes are filled for the last time, they may be carried down cellar and stored away full of potatoes, or apples may be put in them. There is no nicer way of marketing winter apples than in these bushel boxes. Again, in the spring they are just the thing to have the seed around in when cutting, and to carry it to the field in. A boy can wheel the boxes out to the planter as fast as the cutters fill them. A man who worked for me before and after these boxes came around often used to say, "How did we ever get along without them, they are so handy?" In the field, if covers are scarce the boxes may be carried together and set up three or four deep, and then one cover will answer for all. These covers are almost as important as the boxes. We used to carry the boxes together into piles or heaps, and then cover them with a canvas or rubber blanket, and it was quite unhandy. When I was riding to market one day I got to studying over the matter, and it occurred to me that a simple board cover for each box was just what was wanted. Strange that so simple a thing hadn't been thought of before. I went to a mill and had 150 sawed, and took them home with me, and found them to be just the thing. In catching weather, if the potatoes are picked up as fast as dug, and covered, they are all right and ready to load into the wagon any time after it stops raining. One is as independent as possible of the weather.

You will notice that friend Terry says they cost him from \$25.00 to \$30.00 per 100. Well, we have discovered that, by the use of our machinery, we can make nice strong ones, made of light strong basswood, bound clear around the top and clear around the ends with galvanized iron, at the following prices: 25 cts. each; \$2.25 for 10, or \$20.00 per 100. Stuff in the flat, including nails and galvanized iron, \$1.75 for 10, or \$16.50 per 100.

The boxes are extremely handy for a great variety of purposes, aside from apples, potatoes, etc. If you want to pick up stones in the field, they are not strained or pulled out of shape as baskets are; and whatever you put into them is accurately measured. If you want a hen's-nest, I do not know how you can do much better than to take one of these potato-boxes; and if any one should ever want to hive his bees in a box hive,

here you have it of the old orthodox dimensions, and a nice entrance at both front and rear. Perhaps I might add, that, in the way we make them, some ventilation is allowed. The end boards are exactly 13 inches square. Two, exactly alike, are required for a box. Well, the sides and bottom are all made of pieces of board exactly alike—six being required to make the box, each one of these pieces being $17\frac{1}{2}$ inches long and $6\frac{1}{2}$ inches wide. In nailing, first nail a piece on each side, flush with the top edge of the box. Now put on the bottom, the edges being flush with the end-boards. Last of all, put on the two remaining pieces, nailing them into the bottom boards as well as into the ends. This leaves a crack at the middle of each side; and, if the boards ever shrink a little, a smaller one, in the center of the bottom.

If you want to try a potato-box, to see how handy they are to have around, just order one for a packing-box when you are getting some goods. We will send a sample, filled with goods, for only 15 cts., for it saves us the price of a box to put your goods into.

HAMBAGS AND SWINDLES

PERTAINING TO BEE CULTURE.

FRIEND ROOT:—I have got into considerable trouble from the party whose circular I inclose, as he claims I am infringing on his patent in using the oil or enamel cloth that I got from you. He claims that he has a patent on all cloth covers, every thing except boards, and warns me that I shall be prosecuted in the U. S. court. He has sold the right to use his hives in this county, for \$200, to a party in Rockdale. Please instruct me what to do. I am not able to stand a suit; it would ruin me, yet I have my forty stands of bees covered with such sheets, and have sold 70 hives, all with the same sort of sheets, so I am in for it.

WM. WASON.

Rockdale, Milam Co., Texas, April 18, 1885.

Friend W., tell the "Common-sense" folks to commence suit on me for using enamel sheets, if they like. I am, perhaps, the largest infringer, and have probably been using the enamel sheets more years than almost anybody else—certainly long before their patent dates. This is simply a rehash of Mitchell's absurd claims. The circular you send us is the usual one that is sent out with the Common-sense (?) hive. Some may urge that good men's names are appended to their testimonials. Very likely; but these good men have got into company most decidedly bad. No such a patent would be possible or rational. You can cover your bee-hives, or any other farm implements, with cloth, paper, or oil cloth, or any thing you choose, and there can be no patent on it. There is no danger of a suit at all. They are simply trying to blackmail you, friend Wason.

It seems that Prof. Cook does not hesitate to declare publicly where Mrs. Cotton and her hive belong. Surely she can not claim that Prof. Cook is interested in a bee-journal or a hive-manufactory. We copy the following from the *Rural New-Yorker* of Apr. 25:

Y. M. L., Panama, N. Y.—What about Mrs. Lizzie E. Cotton and her wonderful "Controllable" bee-hive? How many dollars' worth of honey will a hive of pure Italian bees make in a season, and how much is a hive of such bees worth?

ANSWERED BY PROF. A. J. COOK.

Mrs. Lizzie E. Cotton has been exposed as a fraud in the *Rural New-Yorker* and leading bee-journals for years. She says her hive and system will surely bring \$20 per colony each year. Such a statement is absurd. The season may be so poor that no honey will be gathered. Even the bee-keepers of Maine, in her own State, pronounce Mrs. Cotton to be a cheat. Her hive and system would not be accepted as a gift by the first bee-keepers of the country. A good colony of Italian bees will, in average seasons, give one swarm, and gather 50 pounds of fine comb honey. Our best bee-men sell good strong colonies, in our best hives—such hives are now unpatented—for \$10. Mrs. Cotton charges double this amount, and many of her patrons complain that what she sends is really worthless.

CONVENTION NOTICES.

The Mahoning Valley Bee-Keepers' Association will hold its next meeting at Newton Falls, Ohio, on Thursday, May 28, 1885. E. W. TURNER, Sec.

The bee-keepers of Western Mich. will hold their spring meeting at Fremont, Mich., May 5, 1885. All are invited to attend. F. S. COVEY, Sec. Coopersville, Mich., April 14, 1885.

The Central Michigan Bee-Keepers' Association holds its spring convention at Lansing, in the State Capitol Building, on Tuesday, May 12, 1885, at 9 A. M. E. N. WOOD, Sec.

No. Lansing, Mich., April 20, 1885.

The next meeting of the Central California Bee-Keepers' Association will take place in the park at Hanford, Tulare Co., in picnic style, at 10 A. M., on the first Wednesday in June. All family folks will bring their baskets; and bee-men generally are invited. GEO. HOBLER, Sec.

Hanford, Tulare Co., Cal., April 11, 1885.

The Northern Ohio Bee-Keepers' Association will hold their annual meeting in the Council Chamber, at Norwalk, Ohio, Saturday, May 9.

Several subjects of immediate practical value will be discussed. Officers will be elected for the ensuing year.

No one engaged in the production of honey can afford to be absent. H. R. BOARDMAN, Sec.

East Townsend, Ohio, April 15, 1885.

PENNSYLVANIA KEYSTONE BEE-KEEPERS' ASSOCIATION.

The next annual meeting of the above association is to be held in the court-house, in the city of Scranton, Pa., at 10 o'clock A. M., and at 1:30 P. M. on the second Tuesday of May, the 12th, 1885.

At the morning session, the annual election of officers will take place. While the association is but just commencing its third year, we feel to congratulate ourselves in having a working membership of fifty and upward; yet there remains much to be accomplished, and we trust that all who keep bees, whether for pleasure or profit, will make it their duty to attend this meeting, and bring their friends. Business of great value will be brought before the meeting. The question-drawer will be opened, and questions answered. Let everybody send a question. All are most cordially invited.

ARTHUR A. DAVIS, Sec.

Clark's Green, Pa., April 17, 1885.

CIRCULARS RECEIVED.

M. C. Kerns, Pomeroy, O., sends an 8-page circular of hives, section boxes, etc.

H. A. Goodrich, Massie, Texas, sends an 8-page circular of supplies generally.

O. H. Townsend, Alamo, Mich., sends us a one-page circular of bees and queens.

D. S. Hall, South Carol., sends a small 8-page circular; specialties, hives and fixtures.

J. C. Misher, Ligonier, Ind., sends us a one-page circular; specialties, bees, nuclei, and queens.

F. D. Wellcome, Poland, Me., sends us an 18-page circular, large pages; bee supplies generally, and small fruits.

Geo. T. Hammond, West Sweden, N. Y., sends a 2-page circular; hives, sections, etc.; specialty, paper boxes for retailing honey.

W. B. Coggeshall, Summit, N. J., sends a 6-page circular, specialties, bees by the pound, and nucleus colonies. Printed at this office.

S. P. Hodgson, Horning's Mills, Ont., Canada, sends a 20-page circular of hives and supplies generally; specialty, tinware for the apiary.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,

EDITOR AND PUBLISHER.

MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, MAY 1, 1885.

Finally, my brethren, be strong in the Lord, and in the power of his might. —Eph. 6:10.

NOTICE the decline in fdm., in another column.

ALSIKE CLOVER.

As we have still in stock a large amount of fine seed, we will, for the rest of the season, fill orders at \$9.00 a bushel; \$4.75 per half bushel, or \$2.50 a peck.

IMPORTED QUEENS.

Our apiarist reports 84 fine imported queens in our hives, wintered over. We don't think any of the brethren will be troubled by delays on imported queens this season.

MAILING QUEENS WITHOUT FOOD.

MISS NELLIE ADAMS, of Sorrento, Fla., mailed us a queen Apr. 23, and forgot to put any candy in the cage. It reached our office on the 23d; bees all dead, but the queen was alive, and when supplied with honey she seemed all right. Now, we would not advise mailing queens without any food; still, it is interesting to know how long they may survive. The weather has been warm and damp, which perhaps favored them somewhat.

INDICATING THE PART OF THE STATE IN WHICH YOU LIVE.

With the permission of the A. B. J. we will copy the excellent plan they have adopted for letting each subscriber tell what portion of the State he lives in. It is virtually the plan adopted by the Postal Guide. It will be understood with the following explanation; thus, ♂ indicates that the friend who uses it resides in the north-east portion of the State; ♀ indicates a southern portion, etc.

CONVERTING A HALF-STORY SIMPLICITY INTO A HONEY-CRATE.

WILL ELLIS, St. Davids, Ontario, near Niagara Falls, sends us a Simplicity half-story, arranged for holding sections on the Heddon or Moore plan, which still admits of using separators. It is essentially the same as the plan mentioned on page 314. It is quite ingeniously arranged, and fills the bill nicely, only it leaves those spaces for imprisoning bees. Trifling as it may seem, I should say that this of itself would be a fatal objection.

WIRE NETTING FOR POULTRY FENCES.

SINCE our last, an enormous trade has sprung up in wire netting for poultry inclosures. The factory

n New York became unable to fill our orders, then we induced a factory in Cleveland to take it up, until they got behind badly, then we struck a factory in Chicago, that bids fair to keep us going. A quantity sufficient to prevent any further delay has just been unloaded from the train. When we advertised to furnish it, we thought we had enough on hand to accommodate all the brethren; but, of course, we did not know there were so many who wanted just exactly the same thing. We shall keep in stock only the four-foot width, and in our own yards this seems to be high enough for almost any purpose (especially if a board one foot wide is put along the bottom) but we can furnish to order any width from two to six feet. If you want us to cut rolls, the price will be $\frac{1}{2}$ c. a foot extra. On two or more rolls, we can now give 5 per cent discount; on ten or more rolls, a discount of 10 per cent. As the above prices are very close indeed, they can be given only when cash comes with order. This wire netting can be used in a hundred different ways, for protecting any thing. As it is galvanized wire, the weather has no effect on it whatever.

THE PRAIRIE FARMER AND THE AMERICAN AGRICULTURIST.

It is amazing to look on and see how two good respectable journals—journals full of years of usefulness—can be so led astray by Satan as to come out in public and quarrel—yes, quarrel worse than a couple of juveniles might be expected to quarrel over some of their playthings. For the sake of decency, if nothing more, dear friends, do stop right where you are, and drop the whole matter. Fill your pages with something of value to your readers, as you have been wont to do. And do not any more, for the sake of the example you set, and for Christ's sake, put another word in print—no, not even in a circular, in regard to these personal differences. Perhaps the feeble voice of GLEANINGS may not count for much, but it may be worth something by way of suggestion. There is a little scrap from good old doctor Watts, that I have thought many times would apply to newspaper editors as well as to quarrelsome children. It seems to me it used to run something like this:

Let dogs delight to bark and bite,
Let fiends their madness prove;
Let brutes and mongrel swind and fight,
For God hath made them so.
But children, you should never let
Your angry passions rise;
Your little hands were never made
To tear each other's eyes.

If anybody else can fix the above better, let him do it.

FERTILIZING QUEENS WHILE IN THE CELL, BY MEANS OF DRONELARVÆ.

At New Orleans this subject was brought up, and some facts were brought forward derogatory to the character of those who claim to have succeeded by this process. Some of the friends may remember the originator of the process was a Mr. B. F. Lee, of South Oxford, N. Y., as given on page 296, 1884. We have written to the postmaster of South Oxford, but, to our great surprise and astonishment, he says he knows no such individual as B. F. Lee. Two of our subscribers at the above post-office reply in the same way. Now, unless Mr. B. F. Lee can come forward and explain matters, it seems to me he bids fair to prove an excellent candidate for the Humbug and Swindle department. I regret now that I did not ascertain more in regard to his standing, before I published his letter. The whole thing seems to be the old story of fertiliz-

ing queens in confinement, over again. In justice to Mr. John M. Price, of Tampa, Fla., who has given us the results of several of his experiments in this matter, I would say that we have known him for years, and know him to be a gentleman. Furthermore, his postmaster replies promptly that he is a gentleman of good standing and reliability. I feel sure that friend Price has been honest in the matter, but I fear he has been mistaken in some of the conclusions he has drawn from the results of his experiments. Now, then, can any one tell us about Mr. B. F. Lee? and can any explanation be given as to why any man should fabricate a letter having such a semblance to the truth as the one mentioned above?

A B C BOOK OF POTATO CULTURE.

The above little book, published by us and compiled by T. B. Terry, of Hudson, O., is now finished. Price 35 cts.; 3 cts. extra if sent by mail. Mr. Terry is well known throughout the State of Ohio by his talks at our farmers' institutes. He is also pretty well known throughout the United States as one of the foremost writers on agriculture, being a regular correspondent of the *Ohio Farmer and Country Gentleman*. Mr. Terry is not only a successful farmer, but he has done more, perhaps, than any other one man in the State of Ohio to raise farming from drudgery to a pleasant pastime. While the little book was written principally for the purpose of telling farmers how to raise a better crop of potatoes, it also touches largely on the great labor question of the day. It tells, in a plain, practical manner, how far brain-work may be made to take the part of hard muscular labor in all farming operations. It discusses intelligently, too, the matter of using modern machinery on the farm. Mr. Terry is a plain, practical man; and while he recommends the use of such machinery for agricultural purposes as has been, by long use, fully approved, he objects, in most emphatic terms, to investing money in new-fangled fertilizers in place of making use of the means to be found on every farm, for producing home-made manures; and he also objects to buying potatoes, or other kinds of seeds, at fabulous prices, when the probabilities are that we have already just as good in every-day use, if we make them do their best.

The book not only makes potato-growing a science, but it reduces it to a system, to be followed through half a dozen years. And, best of all, Mr. Terry works out his system and his theory, and makes it pay, too, as all his neighbors will tell you; and, in fact, you can catch him at it almost any day in the year; for by his method, farmers have no idle days, winter or summer, rain or shine. Neither is Mr. Terry a man who believes in no amusement; for after you have had his little book in your house, your boys may be more anxious to go into Terry's method of farming than they are to patronize skating-rinks.

The book ought to interest every one interested in the great problem of something to do, even if he be not a farmer. My friend, if, after you have read Mr. Terry's little book on potatoes, you decide it is not worth the 35 cents we ask for it, if you will slip it back in its envelope, and return it to us unsoiled, we will return you your money, paying all expenses, and no unpleasant feelings either.

WE have to-day, Apr. 30, 6462 subscribers a gain of 228 over last month.

KIND WORDS FROM OUR CUSTOMERS.

GLEANINGS AS AN ADVERTISING MEDIUM.

Please add that I have sold all the bees I have to spare by advertising in GLEANINGS, as I have become tired of answering letters. J. B. MURRAY, Ada, Ohio, April 1, 1885.

[The advertisement friend M. refers to was given only one insertion on page 218.]

THE A B C OF POTATO CULTURE.

[The following comes from the Ohio Agricultural Experiment Station, and we value it all the more because it gives our book a little criticism as well as kind commendation. Perhaps our people of the Ohio State University are as well prepared to judge of the merits of such a work as anybody anywhere.]

A. I. Root:—I have looked the A B C of Potato Culture through quite carefully, and am much pleased with it. It will pay any one who cultivates the soil, to read the book, whether he grows potatoes or not, for there are many things in it to set one to thinking; but to potato-growers it is invaluable. Mr. Terry's success gives force and weight to his opinions, even on matters where there is a chance for controversy. One feels more like trying the methods advised, because of the enthusiasm the book inspires, than controverting the opinions expressed. The facts stated are just about as near the truth as it is possible to get at present. If there is any criticism to be offered, it is in the style of the book, which is spicy, but not quite systematic and concise enough. In other words, the matter is better suited to the newspaper style than to the book form; but the truth is there all the same.

Very respectfully, W. J. GREEN, Columbus, Ohio, April 24, 1885.

Imported TUNISIAN Queens

at the same prices as imported Cyprians and Syrians. See back numbers. Tunisian queens are bronze color; Lees are darker than common bees, and far better honey-gatherers.

9d FRANK BENTON, MUNICH, GERMANY.

ITALIAN BEES AND QUEENS.

Full Colonies and Nuclei. By the pound, after June 1; Southern-bred queens after May 15.

9 E. A. GASTMAN, Decatur, Ill.

THE SUCCESS FOUNDATION + FASTENER.

"Takes the cake; the fastening is a complete job, as I never saw it before." Chas. E. Muth, Cin., O.

Correspondence with supply dealers solicited.

Circulars free.

9-11-13-15-17d GIWITS & SON, West Jersey, Illinois.

FOR SALE. Black bees, per lb., \$1.00. Black queens, each, 50c. Hybrid blacks, each, 50c. Pure Italian queens from imported mothers (Roth's Imp.) \$1.00. Tested, \$2.00. Address all orders to T. J. FENICE, WILLOTON, IAY, CO., TENN.

SILKWORM EGGS. 25 cts. per M. till May 15. Order now. 2c. stamps. Ethel A. Dyke, Pomeroy, O.

New Maple Sugar.

A limited supply, and some of it very nice. Prices, 8, 9, 10, and 11 c per lb., according to quality. One cent less, if ordered in lots of 100 lbs. or more.

A. I. Root, Medina, O.

Foundation-Mills Lower.

Until further notice, prices will be as follows: 4-inch mill, \$10.00; 6-inch mill, \$13.50; 10-in. mill, \$20.00; 12-inch mill, \$30.00; 14-inch mill, \$40.00.

A. I. Root, Medina, O.

GOLDEN ITALIAN QUEENS.

Bees beautiful, gentle, and great honey-gatherers. Queens large and prolific; untested queens after May, \$1.00; tested, \$2.00. Extra tested to breed from, \$3.50. Send for circular to 9-10-11-12d DARROW & ROSS, LEBANON, ST. CLAIR CO., ILL.

EXCHANGE DEPARTMENT.

Notices will be inserted under this head at one-half our usual rates. All ads intended for this department must not exceed 5 lines, and you must say you want your ad in this department, or we will not be responsible for any error.

WANTED.—To exchange a single-bbl. breech-loading shot-gun, 12 guage, worth \$15, for the same value of brood fdn. Address
9d CHAS. H. SMITH, Pittsfield, Berkshire Co., Mass.

WANTED.—To exchange Brown Leghorn eggs for Italian bees and queens. Send for circular. R. J. NASH, Williamson, Wayne Co., N. Y. 9d

WANTED.—To exchange a good Novelty Printing-Press, foot-power, chase 6½×10½, cabinet, type, cases, 17 fonts of type, brass and wood rule, border, dashes, spaces and quads, leaders, furniture, ink, etc., for bees.
9d J. ARTHUR STAGG, Greensburg, Ind.

WANTED.—To exchange. I have 20 new Simplicity hives, that I wish to exchange for bees by the pound.
9d CYRUS McQUEEN, Balfic, Tuscarawas Co., Ohio.

WANTED.—Ten nuclei of Italian bees, for which I will exchange eggs for hatching, from prize-winning Light Brahmas, P. Rocks, Polish, and Rouen Duck; 50 prizes awarded my birds at Cincinnati show past winter.
9d CHAS. McCLAVE, New London, Huron Co., Ohio.

WANTED.—To exchange. I have an 8-inch "Simmonds" saw, with mandrel and boxes; has never been used; also Italian bees in L-frames, which I want to exchange for a camera or for a Lamb knitting-machine.
9d L. HEINE, Bellmore, Queens Co., N. Y.

WANTED.—To exchange. I have a good hand circular-saw machine, centrifugal power, worth \$25.00; cost \$50.00 when new, that I will exchange for queens, comb fdn., or offers. Send for description.
9 D. S. HALL, So. Cabot, Washington Co., Vt.

WANTED.—To exchange. Friends, if you want to trade bees and queens for hives made up or in the flat, send for my price list. I will take some black bees and young queens by the pound, or in hives.
J. R. LINDLEY, Georgetown, Ill. 9d

WANTED.—To exchange.—Will send one sitting of eggs of superior Plymouth Rock chickens for a pure Italian queen in May. Experience in shipping, safe arrival guaranteed.
9d J. D. ADAMS, Nira, Wash. Co., Iowa.

WANTED.—To exchange Brown Leghorn eggs (from stock of W. E. Bonney), for Italian queens or bees.
W. H. OSBOINE, Chardon, O.

WANTED.—To exchange 4-piece dovetailed sections for bees or Italian queens.
W. S. WRIGHT, Battle Creek, Mich.

WANTED.—From 300 to 500 lbs. extracted honey in exchange for Pure Italian Queens. Will allow 8 cents for white honey, and 6 cts. for clover and honey-dew mixed. Queens at \$1.00 in June and July. Satisfaction guaranteed.
9-11d L. L. TRIEM, La Porte City, Black Hawk Co., Iowa.

60 Colonies of Bees For Sale.

For particulars, call upon or address

A. L. EDWARDS, Skaneateles, N. Y.

I HAVE THEM. Pure Italian Queens, raised from the choicest stock, ready to mail now. Untested queens, \$1.00. Tested queens, 2.00. Send me your order, and send for my circular of queens and bees.
9-20d J. P. CONNELL, Hillsboro, Hill Co., Texas.

POULTRY AND BEES. "Todd" strain Light Brahmas. Eggs, \$2 per 13; \$3 per 26. Also 20 colonies of Italian bees for sale in Simplicity hives.
9d F. S. McCLELLAND, New Brighton, Pa.

110 Colonies of Bees for Sale!

IN THE 8-FRAME LANGSTROTH HIVE.

Hives are nearly new, and well-painted. Combs are ½ foundation; they are strong in bees. Pure Italians, \$5.00; Hybrids, \$4.50. Italians are bees from A. I. Root's best imported stock. Queens all one and two years old this season. My health has failed, and I am compelled to sell. I guarantee safe arrival. Send money in registered letter or postoffice order.
J. R. REED,

9-10d MILFORD, JEFFERSON CO., WIS.

50 STANDS OF ITALIAN

AND GOOD HYBRID BEES FOR SALE.

For one, \$6.00; for 5 or more, \$5.75 per stand, if ordered in May. Bees are in good 10-frame Langstroth hives, containing straight combs built on foundation, and are heavy with honey.

Address W. C. PERKINS,
Jefferson, Greene Co., Iowa.

1885. VALLEY APIARY. 1885.

PLEASANT VALLEY APIARY.

PURE



BRED

ITALIAN AND ALBINO QUEENS.

Untested, after June 1st	per dozen	\$1 00
Tested progeny, three-banded	per dozen	5 00
Selected, young, large and light-colored	per dozen	3 00
Full colonies in Langstroth or Simplicity hives	per colony	8 00
Nuclei on queens, 2 frame, \$2.25; 3 frame	per colony	3 00
Celebrated poplar sections, per M. (sample mail)	per M.	5 50

All orders filled promptly, and safe arrival and satisfaction guaranteed. Full colonies have tested queens; nucleus colonies add the price of queen. The above strains are bred in separate apiaries, home containing over 70 full colonies, all pure Italians. My strains have stood the test of hardiness; have always wintered on summer stands, and have not lost a colony in the past 4 winters. Sample of my large, handsome, light-colored workers sent for 10 cents. Address 9d

E. L. WESTCOTT, Fair Haven, Rutland Co., Vt.

THE CANADIAN BEE JOURNAL.

WEEKLY, \$1.00 PER YEAR.

D. A. JONES & CO., PUBLISHERS.

BEETON, ONTARIO, CANADA.

The only bee journal printed in Canada, and containing much valuable and interesting matter each week from the pens of leading Canadian and United States bee-keepers. Sample copy sent free on receipt of address. Printed on nice toned paper, and in a nice shape for binding, making in one year a volume of 32 pages.
9d

FOUNDATION MOLDS, L. SIZE, \$3.75.

Italian bees, 50c to 90c per lb. Queens, 30c to \$2.50. Fdn., 48c to 55c. Wax taken at 25c. See circular.
8d O. L. OLIVER, FOSTER, MT. VERNON, LINN CO., IOWA.

W. Z. HUTCHINSON,

ROGERSVILLE, GENESEE CO., MICH.,

Can furnish just as neat, white, smooth, and perfect dovetailed white-poplar sections as there are made. Send for sample and prices. A few full colonies of choice Italians, in Heddon hives, for sale at \$8.00 per colony. Untested Italian queens (from the South), \$1.50 each. Tested queens, reared last year in the home apiary, \$3.00 each. Beeswax wanted. Make money orders payable at Flint. 9d

HEADQUARTERS IN THE SOUTH FOR THE MANUFACTURE AND SALE OF BEE-KEEPERS' SUPPLIES

The Only Steam Factory Erected in the South, Exclusively for the Manufacture of Hives, Frames, Sections, Etc.

Viallon, and Root Simplicity Hives, Comb Foundation, Extractors, Smokers, etc. Italian Queens and early four-frame nuclei a specialty. Full colonies in any quantity. For more particulars, and prices, send for my Descriptive Illustrated Catalogue. Also see ad. in February number.

Cash market price for wax.

5tf

P. L. VIALLON,
Bayou Goula, Iberville Parish, La.

BEE-HIVES, ONE-PIECE SECTIONS, COMB FOUNDATION, —AND— Bee-Keepers' Supplies Generally.

Price List Sent Free.

J. J. HURLBERT,
1-11 lmo Lyndon, Whiteside Co., Ill.

NOW READY! NOW READY!!

500 U. S. STANDARD HONEY-EXTRACTORS,
1000 TOLEDO SMOKERS,

Both of which took the first premium at Ohio, Indiana and Michigan Tri-State Fair in Sept., 1884. We also manufacture and deal in a full line of Apianian Supplies. Send address for circular.

3-9d

E. T. LEWIS & CO., Toledo, Lucas Co., O.

1885 Colonies, Nuclei, and Queens, 1885
FOR SALE.
For terms, address 4-5-7-9d
S. D. McLEAN, COLUMBIA MAURY CO., TENNESSEE.

One-Piece SECTIONS, Dovetailed; HIVES OF DIFFERENT VARIETIES:

FRAMES, SHIPPING - CRATES, WIRE
NAILS, ETC.

Send for circular and price list before purchasing.

MILLER BROS & CO.,
5-7-9d Dryden, Mich.



ONE-PIECE SECTIONS A SPECIALTY.

We make five styles and all sizes, and keep other supplies. Sample hundred, 50 cts. Sample and circular free. Orders filled promptly.

7-11d **B. WALKER & CO., CAPAC, ST. CLAIR CO., MICH.**

**DADANT'S FOUNDATION FACTORY, WHOLE-
SALE AND RETAIL.** See advertisement in
another column. 3-11d

IMPORTED QUEENS.

In April, 11 frames in gold.
May and June, 10 " " "
July and August, 9 " " "
September and October, 7 " " "

No order received for less than 8 queens. Queens which die in transit will be replaced only if sent back in a letter. **CHARLES BIANCONCINI & CO.,**
3-13d Bologna, Italy.

BEE-KEEPERS' SUPPLIES

MANUFACTURERS OF

ONE-PIECE SECTIONS,

Made from Basswood.

HIVES OF ALL KINDS,

FOUNDATION, SMOKERS, ETC.

Send for Price List to

23tf

Smith & Goodell, Successors to Derr & Harris.
ROCK FALLS, WHITESIDE CO., ILL.

Bee-Keepers' Supplies

Send us Your Name and Address on a
Postal Before You Purchase

**HIVES. SECTIONS,
COMB FOUNDATION, SMOKERS, &C.
REYNOLDS BROS.**

Williamsburg, - Wayne Co., - Indiana.
7-9-11-13d

PURE ITALIANS.	May	June 1st to 18	June 22 to Oct. 1
Tested queens	\$2.50	\$2.25	\$1.75
Untested queens		1.25	1.00
Bees per pound	2.00	1.50	1.00
Nuclei, per comb of 4000 bees and brood	1.75	1.25	.90
Silverhull buckwheat, \$1.20 per bushel. Instructive circular free.	S. C. PERRY,		
6-7-11d	PORTLAND, IONIA CO., MICH.		

REVERSIBLE-FRAME HIVES, AND REVERSIBLE Frames,

that will fit any Langstroth hive. Sample by mail, 15c. One set, 8 frames, by mail, 80c. By express, 40c; \$4 per hundred. Also white poplar and basswood sections. Send for circular.

O. J. HETHERINGTON & CO.,
7-9-11d East Saginaw, Mich.

1885 ITALIAN QUEENS. 1885

6 WARRANTED QUEENS FOR \$5.00.

Write for Circular.
11-11d

J. T. WILSON,
NICHOLASVILLE, KY.

FLAT - BOTTOM COMB FOUNDATION.

High side-walls, 4 to 14 square feet to the pound. Circular and samples free.

J. VAN DEUSEN & SONS.
4-11d Sole Manufacturers,
SPROUT BROOK, MONT. CO., N. Y.

Bee-Hives and Supplies.

We have remodeled our machinery, and can fill orders on short notice. If wanted, odd sizes made. Send orders now before the rush comes. We have a large stock on hand now. We give 3 per cent discount till Feb. 1. Price list free.

B. J. MILLER & CO.,
2-12d Nappanee, Elkhart Co., Ind.

Beeswax

CRUDE OR REFINED, ALWAYS ON HAND,
AND ORDERS PROMPTLY ATTENDED TO.

RICHARD MERKLE.

Wax Bleacher & Refiner. No. 700 North 2d Street,
ST. LOUIS, MO. 23-9d 1mo

SAFE INTRODUCTION OF QUEENS GUARANTEED

By using Dyke's Safe Introducing and Shipping Cage. This cage was well tested last year all over the U. S. and Canada, and only one report of failure was received of all the queens sent out.

Prices (safe arrival and introduction guaranteed.)
In May. In June. After June.
Untested Italian Queen . . . \$1 65 | \$1 38 | \$1 10
Tested " " " " " 3 30 | 2 75 | 2 20
Warranted " " " " " 2 20 | 1 93 | 1 65

Or we will send queens in the safe cage with full directions, safe arrival only guaranteed for prices as per Root's queen price list. Best Imported Stock. NO FOUL BROOD IN THIS SECTION. We refer to 1st City Bank of Pomeroy. Catalogue giving full particulars and prices, free. Send for it.
7-17-d S. A. DYKE & CO., POMEROY, MEXICO CO., ILL.

THE BEEHIVE APIARIES.

No. Ca. Queens. ABBOT L. SWINSON. No. Ca. Queens 12
Z. Carniolans. Propagator. Z. Carniolans. Z. Z.
Z. Italians. Goldstone, Wayne Co., N. C. Z. Syrians. Z. Z.

PRICE OF LAYING ITALIANS. May. June. July to Oct.
Untested queens, each . . . \$1 00 | \$1 00 | \$1 00
" doz. . . 6 00 | 5 00 | 5 00
Best tested queens, each . . . 3 00 | 2 50 | 2 00
" doz. . . 15 00 | 12 00 | 11 00

The other races, one-fourth more. For nuclei, add 75 cts. for each L. frame of bees and brood to price of queen. Pure wax foundation, 50 cts per lb.; 50 lbs. and over, 48 cts. 7-9-11d

SIX SYRIAN QUEENS, warranted purely mated, for \$6. Single queen, \$1.25. Tested, \$3 each. Italians, same price. Four frame nuclei, L. frame, with tested queen, \$5 each.
6-7-8-9-11d L. R. GOOD, Sparta, Tenn.

DIXON & DILLON,

Parrish, Franklin Co., Illinois.

Manufacturers of and Dealers in all kinds of

APIARIAN SUPPLIES,

at the lowest prices. Also pure ITALIAN BEES and QUEENS. No other bees kept in our yards. For further information, send for price list. 6-13d

I WILL SELL

Chaff hives all complete, with lower frames, for \$2.50; in flat, \$1.50; 2-story Simplicity, complete, \$1.25; in flat, 90c.

Comb Foundation, made from pure refined wax, 45c per lb. for heavy; 55 for light. Other supplies. Send for price list. A. F. STAUFFER,
7-12db Sterling, Whiteside Co., Ill.

The North-Shade Apiary

Holds the field this spring. Our bees have wintered well on fall honey and honey-dew (bees are Italians). Full colonies in either the L. or the Galup hives, for May delivery. Nuclei, Queens, and bees by the pound, for the season. Price List Free.
8-9-11d O. H. TOWNSEND, ALAMO, CAL. CO., MICH.

Oldest Bee Paper in America—Established in 1861.

AMERICAN BEE JOURNAL,

WEEKLY, at \$2.00 a year.

MONTHLY EDITION, 16 pages, 50c a year.

925 West Madison Street, Chicago, Ill.

DADANT'S FOUNDATION

is asserted by hundreds of practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sag, most regular in color, evenest, and neatest, of any that is made.

It is kept for sale by Messrs. A. H. Newman, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; Dougherty & McKee, Indianapolis, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Ezra Baer, Dixon, Lee Co., Ill.; E. S. Armstrong, Jerseyville, Ill.; H. Drum, Adelphi, O.; Arthur Todd, Germantown, Philadelphia, Pa.; E. Kretschmer, Coburg, Iowa; E. F. Smith, Smyrna, N. Y.; C. T. Dale, Mortonsville, Ky.; Clark Johnson & Son, Covington, Ky.; King, Aspinwall & Co., 16th St. N. Y. City, C. A. Graves, Birmingham, O., and numerous other dealers.

Write for samples free, and price list of supplies, accompanied with 150 Complimentary and unsolicited testimonials, from as many bee-keepers, in 1883. We guarantee every inch of our foundation equal to sample in every respect.

CHAS. DADANT & SON,

Hamilton, Hancock Co., Illinois.



Manufacturers of

FIRST-CLASS ARTICLE FOR 15 AND 22c PER LB.

WRITE FOR PARTICULARS. 8-9-11d

Basswood-Trees.

Basswood-trees 1 to 3 feet high, . . . \$1.50 per 100
Hard-maple trees, 3 to 5 feet high, . . . 1.50 per 100
Mountain ash, ornamental, 3 to 5 feet, 10 cts. apiece.
Address HENRY WORTH,
11-1d Boroine, Onondaga Co., N. Y.

COMBS IN LANGSTROTH FRAMES

FOR SALE ABOUT 300.

Rather better than common. Address
8-11d M. E. MUXY, Peru, Huron Co., Ohio.

FDN. PELHAM FDN. WILL MILL. LATEST MODEL.

Never taken out of the box, put on board the train for \$14.00 cash. Address 8-9d

GEO. W. WILLIAMS Economy, Ind.

OLD TYPE FOR SALE.

We have still on hand 76 lbs. of our old nonpareil type for sale. For a sample of it, see any number of GLEANINGS previous to May 15, 1884. Also 17 lbs. of Italic, if desired. As it is all packed, we can not divide either lot. The Roman includes 5 lbs. and over of "logotypes," that is, the words *the*, *and*, *that*, *ing*, *think*, etc., are made all on one body, thus facilitating composition. We offer the lot at 20 cts. per lb. A. I. ROOT, Medina, Ohio.

1879. ITALIAN QUEENS. 1885.

For Italian queens in their purity, and that can not be excelled; Comb Foundation and supplies generally, send for circular. Untested queens, \$11.00 per dozen. T. S. HALL,
7-11db Kirby's Creek, Jackson Co., Ala.

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KIND WORDS FROM OUR CUSTOMERS.

OUR SECTIONS OF 1885.

If your section boxes are not the best in the world, they certainly are the best I ever saw. They go together better, and I can keep them square, when they are together—a thing very much to be desired.

A. W. CHENEY.

Kanawha Falls, W. Va., May 11, 1885.

LOWER FREIGHTS.

The goods you sent me arrived here the sixth inst. all right. I am much pleased with them, and the freight (\$5c.) was very moderate, so I can afford to order goods of you again when needed. Bees all alive.

JOS. C. HAINES.

Mickleton, N. J., Mar. 9, 1885.

MAAMOTH CAVE

Your description of your visit to the Mammoth Cave is the best thing you have ever written. It is worth more than the price of GLEANINGS for the whole year. The children all read it, and are anxious for the next number to come, to get the rest of it.

MAHALA B. CHADDOCK.

Vermont, Ill., April 19, 1885.

GLEANINGS AS AN ADVERTISING MEDIUM.

Please drop my ad't, as I have all the orders I want at present.

OLIVER FOSTER.

Mt. Vernon, Iowa, May 11, 1885.

Please do not let my ad. appear again. I have refused hundreds of orders, and still the letters come, five to ten a day.

G. W. GATES.

Bartlett, Tenn., Apr. 22, 1885.

If you receive this in time to not let my advertisement appear in May number, please do so, if not, all right. I will pay for the one insertion in May. The demand for bees this season is too great for the bees.

DAN WHITE.

New London, Ohio, April 27, 1885.

THE FIVE-CENT GLASS-CUTTER FOR CUTTING PAPER.

The goods ordered from you came all O. K. The glass-cutter works as well for cutting patterns from paper as a pair of shears, when laid on a hard board or glass.

J. M. PETERS.

Bleeker, N. Y., Apr. 13, 1885.

[Thanks, friend P. Our painter has just made use of one of these glass-cutters for cutting out his stencils, and finds them away ahead of a knife.]

SOME KIND WORDS IN REGARD TO OUR MANNER OF SHIPPING QUEENS.

The imported queen which you mailed the 27th of April was received last night, introduced to a full colony this forenoon at 9 o'clock, and this afternoon at 6 o'clock she is doing a fair job of laying. I am very much gratified by the excellent order in which she was received. The bees all looked as if they had been caged only a few hours.

The first imported queen which you sent me several years ago has never had her equal in my yard, both as to the working qualities of her bees, and also their docility and markings.

Kansas City, May 1, 1885.

E. M. HAYHURST.

KIND WORDS IN REGARD TO GLEANINGS.

A great number of kind words have come in regard to the way GLEANINGS is managed, especially in regard to its talks on religion as well as bees. It would be altogether out of the question to think of giving place to these, and, in fact, I have thought best to omit one article from friend Hutchinson himself, as I think the space may be better occupied. I have thought best, however, to give place to the following:

My Dear Friend Root:—I have just read the article from friend H. on page 309, and am greatly surprised at the way he comments on the way GLEANINGS is edited—he is generally so level-headed. He says, "I have heard many others express similar views." Locality may have something to do with it—he certainly could not say that of this locality. I prize the Home Papers very highly, as do many of my neighbors, to whom I lend the paper. The piece in Mar. 15, on borrowing, etc., was read in our Good-Temper Lodge to an interested audience lately. Friend Root, you are doing a good work, and let nothing turn you from it. There is not enough of religion in our general business—that is a great lack of our time. I often think of one of Paul's messages, where he says, "Whether therefore ye eat, or whether ye drink, or whatsoever ye do, do all to the glory of God." Which means that the glory of God should be in, over, and above all our temporal business; and so I say, go on; give us Home Papers and religious thoughts. I should like to write you a long letter, but I know your time will not allow it.

C. W. COSTELLOE.

Waterboro, Me., May 9, 1885.

[Very likely GLEANINGS has sometimes omitted things of much importance, to give place to other matter of very little general importance, and I am going to try hard to profit by the kind criticisms I have had from time to time, from others as well as friend H., always keeping in mind, however, that seeking the kingdom of God and his righteousness is, at least to my mind, the first duty before us all.]

CONVENTION NOTICES.

The Mahoning Valley Bee-Keepers' Association will hold its next meeting at Newton Falls, Ohio, on Thursday, May 28, 1885.

E. W. TURNER, Sec.

The Bee-keepers' Association of Central Illinois will meet at Bloomington on July 15th, at 10 o'clock A. M.

WM. B. LAWRENCE, Sec.

Bloomington, Ill., April 30, 1885.

The 2d annual picnic of the Northern Mich. Bee-keepers' Society will be held at the apiary of F. A. Palmer, one mile west of McBride, Thursday, May 28. Teams will be at the depot in the morning to convey those coming on the cars to the grounds, and also return them in time for the P. M. trains home. Hot tea and coffee will be served in abundance, and all friends of the honey-bee are cordially invited. Remember the good time we had at Ionia last year, and come and let us compare notes.

McBride, Mich.

F. A. PALMER, Sec.

FRADENBURG'S RABBITS.

I have now 175 ready to fill orders, and shall have more in due season.

A. A. FRADENBURG,

Port Washington, O.

SECOND-HAND FOOT-POWER SAWS.

We have, subject to our order, three Barnes foot-power buzz-saws, which we have taken from parties whose business has enlarged so much that they have no further use for them. They are all nearly new, in good order, having all the latest improvements. We will sell them for one-fourth less than the regular retail price; that is, we will sell a \$49.00 saw for \$30.00.

A. I. ROOT, Medina, Ohio.

Decline in Sections.

UNTIL further notice, the regular Simplicity sections will be \$4.50 per 1000; 10,000 or more, \$4.00 per 1000; 100,000 or more, \$3.75 per 1000.

A. I. ROOT, Medina, O.

Cheap! ✠ Cheap!

SECTIONS. | FOUNDATION.

ALL IN ONE PIECE. PER POUND.

Per 1000.....\$ 4 50
 " 500.....21 00

For Brood comb.....45c
 " Sections.....12c

Price List Free. ✠ **M. H. HUNT,**
 914db BELL BRANCH, MICH.

1885 ITALIAN QUEENS 1885

Untested Queens in March and April.....\$1 25
 Afterward.....1 00

J. S. TADLOCK,
 514db LULING, CALDWELL CO., TEXAS.

F. A. & H. O. SALISBURY'S
CATALOGUE

SENT FREE ON APPLICATION.

BEE-KEEPERS' SUPPLIES AND ENGINES.

214db CEDDES, NEW YORK.

1879. ITALIAN QUEENS. 1885.

For Italian queens in their purity, and that can not be excelled; Comb Foundation and supplies generally, send for circular. Untested queens, \$1.00 per dozen.

T. S. HALL,
 514db Kirby's Creek, Jackson Co., Ala.

ROOT'S CHAFF HIVES

Still lead, and we furnish them at
Hard-Pan Prices.

Our 5th Annual Circular, containing a full line of Bee-Keepers' goods, will be sent free on application.

514db S. C. & J. P. WATTS, MURRAY, CLEARFIELD CO., PA.

FROM CHOICE IMPROVED QUEENS

I will, after June 21, furnish untested queens from my choice improved queen-mother, for \$1.00 each. Nucleus with queen, \$3.00.

914db J. L. HYDE, POMFRET LANDING, CONN.

New Maple Sugar.

A limited supply, and some of it very nice. Prices, 8, 9, 10, and 11 c per lb., according to quality. One cent less, if ordered in lots of 100 lbs. or more.

A. I. Root, Medina, O.

Foundation-Mills Lower.

Until further notice, prices will be as follows: 4-inch mill, \$10.00; 6 inch mill, \$13 50; 10-in. mill, \$20.00; 12-inch mill, \$30.00; 14-inch mill, \$40.00.

A. I. Root, Medina, O.

GOLDEN ITALIAN QUEENS.

Bees beautiful, gentle, and great honey-gatherers. Queens large and prolific; untested queens after May, \$1.00; tested, \$2.00. Extra tested to breed from, \$3.50. Send for circular to 9-10-11-12d

DARROW & ROSS, LEBANON, ST. CLAIR CO., ILL.

SOMETHING NEW.

As I have greatly increased my facilities for manufacturing

Apiary Supplies,

It will be to your advantage to send for price list before purchasing elsewhere. Cash paid for bees-wax.

214db **A. B. HOWE,**
 Council Bluffs, Iowa.

RAPE SEED, 15c PER LB.; 10 LBS. \$1.00. Spider-plant Seed, \$2.00 per lb. Simpson Plants, \$5.00 per thousand. Must inclose 18c per lb. for postage.

ANDREW GURNEY,
 7-10db College Hill, Poughkeepsie, N. Y.

DADANT'S FOUNDATION

is asserted by hundreds of practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sag, most regular in color, evenest, and neatest, of any that is made.

It is kept for sale by Messrs. A. H. Newman, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; Dougherty & McKee, Indianapolis, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Ezra Baer, Dixon, Lee Co., Ill.; E. S. Armstrong, Jerseyville, Ill.; H. Drum, Adelphi, O.; Arthur Todd, Germantown, Philadelphia, Pa.; E. Kretschmer, Coburg, Iowa; E. F. Smith, Smyrna, N. Y.; C. T. Dale, Mortonsville, Ky.; Clark Johnson & Son, Covington, Ky.; King, Aspinwall & Co., 16 Thomas St., New York City; C. A. Graves, Birmingham, O.; M. J. Dickason, Hiawatha, Kan., and numerous other dealers.

Write for samples, free, and price list of supplies, accompanied with 150 Complimentary and unsolicited testimonials, from as many bee-keepers, in 1885. We guarantee every inch of our foundation equal to sample in every respect.

3014db **CHAS. DADANT & SON,**
 Hamilton, Hancock Co., Illinois.

Bee-Hives AND Sections!

NEW SHOP AND NEW MACHINERY.

The Largest Manufactory of Bee-Hives, Sections, etc., in the World.

Our Capacity now is a Carload of Goods Daily.

NOTICE.

By enlarging our factory last year we were put behind with our work so that by spring we were obliged to return many orders. Now we have ample stock ahead, and can fill orders promptly.

Write for our new price list for 1885.

G. B. LEWIS & CO.,
 1914db WATERTOWN, WISCONSIN.

DIXON & DILLON,

Parrish, Franklin Co., Illinois.

Manufacturers of and Dealers in all kinds of

APIARIAN SUPPLIES,

at the lowest prices. Also pure **ITALIAN BEES** and **QUEENS**. No other bees kept in our yards. For further information, send for price list. 6-13db

BINGHAM SMOKERS AND KNIVES.

BY MAIL, POSTPAID.

Ductor-smoker, wide shield.....	3 1/2 inch.....	\$2 00
Conqueror-smoker, wide shield.....	3 ".....	1 75
Large-smoker, wide shield.....	2 1/2 ".....	1 50
Extra-smoker, wide shield.....	2 ".....	1 25
Plain-smoker.....	2 ".....	1 00
Little Wonder-smoker.....	1 1/2 ".....	65
Bingham & Hetherington Honey-Knife, 2 inch.....		1 15

To sell again, apply for dozen or half dozen rates. Address
BINGHAM & HETHERINGTON, ABRONIA, MICH.
 1914db

I HAVE THEM. Pure Italian Queens, raised from the choicest stock, ready to mail now. Untested queens, \$1.00. Tested queens, 2.00. Send me your order, and send for my circular of queens and bees.

J. F. CONNELL,
 9-23db Hillsboro, Hill Co., Texas.

COMBS IN LANGSTROTH FRAMES

FOR SALE—ABOUT 300.

Rather better than common. Address
 814db **M. E. NUNN,** Peru, Haron Co., Ohio.

110 Colonies of Bees for Sale!

IN THE 8-FRAME LANGSTROTH HIVE.

Hives are nearly new, and well-painted. Combs are $\frac{1}{2}$ foundation; they are strong in bees. Pure Italians, \$5.00; Hybrids, \$4.50. Italians are bees from A. I. Root's best imported stock. Queens all one and two years old this season. My health has failed, and I am compelled to sell. I guarantee safe arrival. Send money in registered letter or postoffice order.

J. R. REED,
9-10d MILFORD, JEFFERSON CO., WIS.

TRY THE BELLINZONA ITALIANS. and see for yourself that they are *THE BEST*. Warranted queens in May, \$1.25; June, \$1.10; July and after, \$1.00; six for \$5.00. Bees at reduced rates. Send for descriptive circular. Satisfaction guaranteed. CHAS. D. DUVALL,
9f1db Spencerville, Mont. Co., Md.

DADANT'S FOUNDATION FACTORY, WHOLESALE and RETAIL.
See advertisement in another column. 8f1dd

FOUNDATION.—Who wants it for 49 cts. per lb.? 200 lbs. in the lot, ready made, and will be cut to fit any frame. T. S. Hall, Kirby's Creek, Ala. 9-10d

Imported TUNISIAN Queens.
10-11d FRANK BENTON, MUNICH, GERMANY.

SECTIONS.

Western headquarters for bee-men's supplies. Four-piece sections, and hives of every kind, a specialty. Flory's corner-clamps, etc. Orders for sections and clamps filled in a few hours' notice. Send for sample and prices.

9-20db M. R. MADARY,
Box 172. Fresno City, Cal.

Established 1855.

HEADQUARTERS BEESWAX

We have constantly on hand a large stock of Domestic, Imported, and Refined Beeswax in original shape, which we offer to manufacturers of Comb Foundation at lowest prices. Write to us for prices, stating quantity wanted. Address

R. ECKERMANN & WY.
Beeswax Bleachers & Refiners. STRAUSS, N. Y.
N. B.—We have low freight rates to all points on quantities. 24-11db

350 COLONIES

Italian Bees For Sale.

FULL COLONIES, NUCLEI, TESTED
AND DOLLAR QUEENS.

CIRCULAR ON APPLICATION.

8f1db J. H. & W. ROBERTSON,
Pawanna, Ind. Co., Mich.

Simply Send me Your Name

and address, plainly written on a postal card, and I will send in return my circular and price list of Italian and Holy-Land Bees and Queens, free.

7-10db J. C. MISHLER, LIGONIER, NOBLE CO., IND.

I WILL SELL

Chaff hives all complete, with lower frames, for \$2.50; in flat, \$1.50; 2-story Simplicity, complete, \$1.25; in flat, 90c.

Comb Foundation, made from pure refined wax, 45c per lb. for heavy; 55 for light. Other supplies. Send for price list. A. F. STAUFFER,
7-32db Sterling, Whiteside Co., Ill.

A WONDER ON WHEELS!



The Revolving Landside and Two Horses.

VERSUS

The Drag-Bar and Three!

Light Draft and Comfort to the front. Side draft, "Horse Killing," and sore shoulders, to the rear.

Less "tinkering," easier driving, straighter furrows, a greater range of work, and more of it with the same team than any plow in existence, on or off wheels. Uses no pole except in stumpy fields, has no equal in hard or stony fields, or on hill-sides.

Send for our free book, entitled, "Solid Comfort; or, Fun on the Farm."

The editor of this paper owns a "Solid Comfort" sulky, to whom we would refer for reference.

We also have the new Economist Hand Plow, with reversible self-sharpening point and wing, in full steel; full-chilled and Combination. All goods fully warranted. Address

ECONOMIST FLOW CO.,
9-10d Columbus, Ohio.

THE CANADIAN BEE JOURNAL.

WEEKLY. \$1.00 PER YEAR.

D. A. Jones & Co., Publishers, Beeton, Ont., Can.

The only bee journal printed in Canada, and containing much valuable and interesting matter each week from the pens of leading Canadian and United States bee-keepers. Sample copy sent free on receipt of address. Printed on nice-toned paper, and in a nice shape for binding, making in one year a volume of 52 pages. 9f1db

W. Z. HUTCHINSON,

ROGERSVILLE, GENESEE CO., MICH.,

Can furnish just as neat, white, smooth, and perfect dovetailed white-poplar sections as there are made. Send for sample and prices. A few full colonies of choice Italians, in Heddon hives, for sale at \$8.00 per colony. Untested Italian queens (from the South), \$1.50 each. Tested queens, reared last year in the home apiary, \$3.00 each. Beeswax wanted. Make money orders payable at Flint. 9f1db

SIX SYRIAN QUEENS, warranted purely mated, for \$6. Single queen, \$1.25. Tested, \$3 each. Italians, same price. Four frame nuclei, L. frame, with tested queen, \$5 each.
6-7-8-9d11b

L. R. GOOD, Sparta, Tenn.

60 Colonies of Bees For Sale.

For particulars, call upon or address

8-12db A. L. EDWARDS, Skaneateles, N. Y.

CALL IN TIME

For colonies of pure Italian Bees, with home-bred queen, each, \$7.00; 3, \$6.00; 5 to 10, \$5.50; 15, \$5.00. Foundation for sale. Beeswax wanted. For particulars call. E. C. Hilgermann, Ashippun, Dodge Co., Wis.
10-11d

HONEY COLUMN.

CITY MARKETS.

ST. LOUIS.—Honey.—There is no change to note in our honey market. Quote extracted, southern, 14½c; 3½c. Comb honey, no choice white clover in market. A little inquiry for small pkgs. at about 16c in nice order. Dark not wanted. *Bee-swar*.—A little weaker. Orders scarce; 27½c. If demand improves, market will go higher.

May 9, 1885.

W. T. ANDERSON & Co.,
104 N. Third St., St. Louis, Mo.

CLEVELAND.—Honey.—The market is remarkably quiet just now, none moving; prices are unchanged; 14½c for best white 1-lb. sections; 12½c for second quality, and 2-lb. sections. Extracted not wanted. *Bee-swar*, 28½c. A. C. KENDEL.

May 12, 1885.

115 Ontario St., Cleveland, O.

DETROIT.—Honey.—The honey market is well supplied, and the demand quiet. One-pound sections, 12½c. A. B. WEED.

May 12, 1885.

KANSAS CITY.—Honey.—Demand for choice white comb, in ½, 1, and 2 lb. sections, good, and prices fairly maintained; ½ lb., 15½c; 1 lb., 13½c; 2 lb., 10½c. Extracted, slow at 50½c. *Bee-swar*, 25½c. According to quality. We want some ½-lb. sections of comb honey, and will need some more nice white 1-lb. sections. Shall be pleased to hear from parties having any.

May 11, 1885.

CLEMONS, CLOON & Co.,
Kansas City, Mo.

CHICAGO.—Honey.—Comb honey sells slowly; not much change in prices. For a fine quality, 10½c. is about the range. Canded comb honey is unsalable. Extracted, 6½c. *Bee-swar*.—Dull at 28c. for best.

May 12, 1885.

R. A. BURNETT,
161 So. Water St., Chicago, Ill.

MILWAUKEE.—Honey.—This market for honey is without any particular interest; very little demand, and prices almost nominal. Maple sweets now supply the demand for those who eat much honey. Will quote 1-lb. sections, white, 13½c; large white sections, 10½c; extracted, in pails, 8½c; extracted in kegs, 7½c.

May 12, 1885.

Bee-swar.—Pure and yellow, 30½c; dark, 20½c.

May 12, 1885.

A. V. BISHOP,
142 West Water St., Milwaukee, Wis.

EASTERN QUEENS.

Importing large quantities, we are enabled to quote:

	Spring.	Fall.
Syrian Queens	\$9.00	\$7.00
Palestine "	8.00	6.00
Italian "	4.00	3.00

All guaranteed pure, and reared in native lands, safely delivered by mail. Registered, draft, P. C.

THOS. EDEY & SON,

Steam Joinery Works, St. Neots, England.
10-11 tfd

ITALIAN QUEENS,

\$1.00; \$10.00 per dozen; tested, \$2.00. Safe arrival guaranteed. Circular free.

J. M. KILLOUGH & Co.,
1014d, San Marcos, Hays Co., Tex.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column.

Warranted Italian Queens.

Bred with care, from finest imported stock, only \$1.00. Address for price list,
S. F. REED, No. Dorchester, N. H.

IF YOU WISH TO TRY

The **HEDDON SECTION CASE** adapted to the Simplicity hive, don't fail to send for my circular, as it will tell you how to get samples of them free.

D. S. HALL, South Cabot, Vt.

BEEES BY THE POUND.

200 Colonies to draw from. Safe arrival guaranteed. Send for circular before purchasing elsewhere.
T. P. ANDREWS,
9d Farina, Fayette Co., Illinois.

Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they want to dispose of, we will insert notices free of charge, as below. We do this because there is hardly value enough to these queens to pay for buying them up and keeping them in stock; and yet it is oftentimes quite an accommodation to those who can not afford higher-priced ones.

QUEENS FOR SALE.—Hybrid queens, 50 cts. each; black queens, 25c each, from June 1 to Oct. 1. Safe arrival guaranteed.
R. H. BAILEY,
7-11db P. O. Box 81, Ausable Forks, Essex Co., N. Y.

I have about 6 hybrid queens that I will take 50c each for. Address at once,
A. B. JOHNSON, Elizabethtown, N. C.

EXCHANGE DEPARTMENT.

Notices will be inserted under this head at one-half our usual rates. All ads intended for this department must not exceed 5 lines, and you must say you want your ad in this department, or we will not be responsible for any error.

WANTED.—To exchange 4-piece dovetailed sections for bees or Italian queens.
W. S. WRIGHT, Battle Creek, Mich.

WANTED.—To trade L. hives complete, for comb honey, sections full of fdn., or chaff hives, for bees or fdn. mill.
JOHN C. STEWART, Hopkins, Nodaway Co., Mo.

WANTED.—To exchange a \$35.00 aquarium for a good medium-size foot-lathe. A Shipman's Demas No. 4, or a Barnes No. 4 preferred.
JAS. H. ANDRUS, Almont, Lapeer Co., Mich.

WANTED.—To exchange a good Excelsior printing-press, self-inker, chase 3x5, with 7 fonts of type, with furniture to match, for young bees, any color. Address
SAMUEL HEATH, Rimer, Armstrong Co., Pa.

WANTED.—To send a sitting of 13 choice Brown Leghorn eggs for Italian queens in May or June; will send the eggs at once, and queens may be sent when ready.
C. L. BROOKS, Deansville, Oneida Co., N. Y.

HELP FOR THE SUFFERERS.

The following friends have agreed to furnish bees and queens at low prices, for the benefit of the friends who have lost badly during the past severe winter. In consideration of this, they are allowed to give the following notices once free of charge. As will be noticed, the prices are more or less lower than our regular advertised rates.

10 lbs. of Italian bees for \$12.50. Full colonies in Simplicity hive, or brood-chamber of Manum hive, for \$8.00.
W. H. PROCTOR, Fair Haven, Vt.

During the months of May, June, and July, I will sell 2-frame nuclei, with untested Italian queen, for \$2.25; 3-frame nuclei, with untested Italian queen, \$2.75. Italian bees by the lb., the 1st of June and after, \$1.00. Satisfaction guaranteed. Address
A. B. JOHNSON, Elizabethtown, Bladen Co., N. C.

On and after May 15th, and until further notice, I will sell nuclei, with black or hybrid bees and queens, just as they happen to come, at \$2.00 each, to contain queen and one frame with adhering bees, and honey for the trip; and if the friends wish to add 50 cents more I will send a frame containing as much brood as can be spared at that price, and at this time of the year. The above sent in light shipping-boxes, and perfect satisfaction guaranteed.
C. W. SLEIGH, Richland Center, Wis.



Vol. XIII.

MAY 15, 1885.

No. 10.

TERMS: \$1.00 PER ANNUM, IN ADVANCE; 2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00, 10 or more, 75 cts. each. Single Number, 10 cts. Additions to clubs may be made at club rates. Above are all to be sent at ONE POSTOFFICE.

Established in 1873.

PUBLISHED SEMI-MONTHLY BY

A. I. ROOT, MEDINA, OHIO.

Clubs to different postoffices, NOT LESS than 20 cts. each. Sent postpaid, in the U. S. and Canada. To all other countries of the Universal Postal Union, 30 per year extra. To all countries NOT of the U. P. U., 42c per year extra.

THE A B C OF POTATO CULTURE.

A "TALK," SUGGESTED BY READING IT.

FRIEND ROOT:—We had so thoroughly enjoyed the writings of Mr. Terry, in the *Country Gentleman*, that, the moment we saw that his "potato-book" was "out" we sent for it.

It came last evening. We found it so interesting, that, when the little girls were asleep, we "commenced over again," and read aloud to Mrs. H. Before retiring we had read it about half through. After retiring we "talked" until Mrs. H. said, "What is it keeping us awake? is it that potato-book?"

"I was just thinking the same thing," was the reply.

This morning we were up at daylight: the reading is now finished, the book sent to Mr. Heddon, with the request that, after reading it, he send it to Prof. Cook. Friend Root, you are perfectly safe in offering to "trade back" with those who think, after reading the book, that they have not got the worth of their money. What a wide-awake, *thinking* man is Mr. Terry! What a bee-keeper he would have made! What an *any thing* he would have made! Why can not each and every person in this world find some work for which he and his surroundings are specially fitted, then *stick* to this one thing, and put their whole *being* into it? The reading of this book has aroused us wonderfully. What, to become a potato-grower? Oh, no; nothing of the kind, but to try to become a better *bee-keeper*. We long ago adopted the same course as has Mr. Terry; i. e., we don't make our butter, nor keep

pigs nor chickens, much to the wonderment and against the advice of many neighbors. We can raise our butter, eggs, chickens, meat, "potatoes," etc., much more easily and cheaply in the apiary.

We should not forget, however, that everybody is not constituted alike. You, friend Root, were once "crazy" to keep bees, then to raise carp, then strawberries; and after reading Mr. Terry's most excellent little work upon potato culture you are "crazy" to raise them; while the reading of it makes us crazy only to do something to make of bee-keeping a more safe and profitable business. The wintering trouble is the one great obstacle at present; when this is overcome (and we have full faith that it will be), then will bee-keeping become more of a specialty than ever. Features and factors that now pass unheeded will be most forcibly brought to our notice; as, for instance, the idea put forth by Mr. Heddon; viz., "How shall we exhaust the field with the least expenditure of capital and labor?" We shall learn to manipulate hives instead of frames. The Heddon method of preventing after-swarming is an illustration of our meaning. Then we shall handle apiaries as we now handle hives. Honey will be cheap? Of course, it will; but the men who are then engaged in its production will be more prosperous than at present. They can afford the machinery, fixtures, and appliances to handle several large apiaries, the same as Mr. Terry can afford expensive potato-raising machinery; and it will give them the same advantage over the bee-keeper with a few colonies that Mr. Terry has over the man who raises an acre or two of potatoes. There is *something* in which each one can excel; that, let him do. We sincerely hope,

friend Root, that you will sell thousands and thousands of this little work, although the buyers will have the best end of the bargain. We wish that every one who is now engaged in some occupation that is capable of profitably absorbing all his time, talents, and money, but is thinking of adding bees, or any thing else, to his regular occupation, with the hopes of making money thereby, might read the chapter upon "Potato-growing as a Specialty." That one chapter is, in our opinion, worth \$5.00—no, it is priceless—to one who has never given the matter much thought.

The reason we sent the book to Mr. Heddon is, that he might enjoy seeing his views upon this subject (specialty) so well expressed; and we sent it to Prof. Cook because he has *opposite* views, and we hope that a perusal of this chapter might cause him to at least modify them. Prof. Cook may not be *opposed* to specialty, but we have never known him to argue as does Mr. Terry; in fact, it seems to us, that he always takes a nearly opposite view.

We must not omit to mention that Mr. Terry *pays* the children for "picking bugs." How much better than *compelling* them to do unpleasant work! how much easier and more pleasant for the children! At "our house" the little girls earned nearly enough by "whacking together sections," as they call it, last winter, to buy each of them a "little red rocking-chair." His views upon raising a first-class article are exactly in accord with our own, as will be seen by comparing them with those given in our article on raising first class honey. Those who raise potatoes should get the book, and learn how to do better, or else quit the business: those who do not, should get it as a "brain-tonic."

W. Z. HUTCHINSON.

Rogersville, Mich., May, 1885.

Why, old friend, what ails you? I was afraid to send you a copy of our book on potato culture, because I knew you were so much in favor of specialties, and I was afraid you would not want to take time to read a book all about potatoes. It did occur to me, that there were many things in it that would please you, but I had no idea that you and your wife too would drink it all in, as you seem to have done. Your concluding sentence hits the spot exactly, and it has seemed to me every time I read it, that it is good for everybody as a "brain tonic." I have thought of a hundred different friends to whom I wanted to send it, but I was afraid that they would think that I and my books were a nuisance. I do love to see these outdoor rural industries developed and unfolded, and it has sometimes almost seemed to me that the millennium was coming along this line, by having people waked up to the possibilities of these homely, every-day things all round about them. Just think of the idea—making the raising of potatoes a new industry, and the corner-stone, almost, of a new science! Yes, it struck me, too, that we bee-keepers need just such talks and teachings as friend Terry is capable of giving. The farmers of the State of Ohio, in fact, decided upon this some time ago; for they bid fair to keep him employed most of his winters in talking to the farmers of the State at our excellent farmers' institutes.

What can be more homely or commonplace than a potato? and yet how odd it

seems to think of a talented and educated man making the potato his life study!

"DRY FECES." (?)

PROF. COOK IS STILL VERY DECIDED IN REGARD TO THE MATTER.

MR. EDITOR:—This "dry feces" matter is going to be a veritable "wheat into chess" controversy in apiculture. Science may kill theory so dead that there is not enough of the corpse to decently bury; yet, like Banquo's ghost, it will spring to life again, and resurrected, too, not by ignorant men, but by those whom we should expect would be too wary to be carrying about an old theory never possessing any vitality, and, moreover, killed dead time and again.

Recently I have received these "dry feces," indirectly from Mr. Cornell twice; from W. F. Clarke, James Heddon, G. M. Doolittle, etc. What are they? Mostly beeswax, often containing pollen, and frequently wood, paper, paint, indeed any thing that the bees may attack with their jaws in the attempt at removal.

Mr. Editor, did you ever try to remove—in the absence of a pocket-knife—bitter bark from a twig, or any other ill-tasting substance, with the teeth? What did you do? You spit it out, of course. Well, you may not like to be told so, but that was the exact parallel of "dry feces." You remember that bite of comb with its bitter bee-bread, and how you cast it forth with spitfire-like energy. You extruded "dry feces," not only in origin, but in very nature—wax and bee-bread.

As will be seen in the paper that I read at Lexington, Ky., before the N. A. B. K. A., I have examined this subject with glass, test-tube, and crucible, and each and every test spoke the same conclusion—rejected pellets formed by gnawing of the bees. They taste like wax, or wax and bee-bread; melt easily like wax; dissolve quickly in alcohol or ether, but not in water, are seen to be wax often containing pollen grains and miscellaneous substances, when viewed with the microscope; blaze up when put in a flame, with the odor of wax, and sometimes of burning nitrogenous substance. I have these pellets now that contain fibers of wood as long as a bee. Surely this would have been a pretty irritating cathartic.

I have dissected hundreds of bees, and dry excreta is *never* found. The real excreta of bees always breaks up readily in water—there is no wax in it—forming a yellowish or light-colored mixture. This is true if we take them even when dry and hard, after the bee has been long dead. These gnawings will never break up in water. I will tell you, Mr. Editor, where you will find these gnawings piled up quickly and high. Where a weak colony is robbed. The bees in robbing cut off the cappings, rejecting the gnawings, and the weak bees are too reduced or too occupied to carry off the chips, and so the "chips" pile up high under the combs. I have just seen such a case, and could gather a table-spoonful of gnawings just like those received from W. F. Clarke, and all made or dropped in a few hours.

Some harder darker pellets from Mr. Cornell seem like feces. I have never seen such in bees, and have never found any such under bees in winter or spring; yet that bees, like other animals, may, upon

occasion, get costive, and void impacted matter, is possible. That they do so in our best wintering is certainly not true so far as I have examined.

Let brothers Cornell, Tinker, Clarke, or any other doubting Thomas, investigate this matter fully, and he will doubt no longer. No wonder the late Mr. Quinby, and Mr. Abbott, of England, thought these feces. I felt sure, when I just trusted to my unaided eyes; but full investigation showed that I was wholly wrong. Shut bees up in summer, and these pellets will fall thick in the hive, as the bees gnaw hard on wire gauze and wood, in hopes to escape.

A. J. COOK.

Agricultural College, Mich., April 25, 1885.

HELP FOR THE SUFFERERS.

SELLING BEES BY THE POUND AT LOW PRICES.

I HAVE received a shower of letters and postals, asking questions about my bees, such as these; "Have you any foul brood among your bees, and did you truly buy imported stock to breed from?" "It must be your bees are in poor condition, you advertise at so low figures." "Send me 30 swarms C. O. D.; and if the bees are all right, and have queens all right, I will keep them."

Christopher Grimm, of Jefferson, was here to see me the 4th day of May, and he went out among the bees and he said he never saw so many swarms together in such perfect condition.

And now, friend Root, this 9th day of May I send you by express one of my pure Italian swarms, daughter of the imported queen I bought of you in 1883; and what I wish of you is to examine this swarm, and pass judgment on it, and then insert a slip in GLEANINGS, as to whether they are good or poor, or whether it is worth \$5.00 dollars or not; and after deducting all expense, you may give me credit for what you think they are worth, or you need not allow me any thing. I leave it to your judgment. The reason I send this swarm in this way is, it will help people to have more confidence in my honesty. I want to sell my bees, for the reason I am confined to the house with a chronic difficulty.

J. R. REED.

Milford, Wis., May 9, 1885.

Friend R., I knew you would have a shower of applications, and I hope you have bees enough to fill all your orders. By the way, where advertisers offer bees below usual prices, I think it would be a good thing for them to state how many colonies they have to draw from, so that applicants may calculate what the probabilities are of their shipper being overrun with orders. In our price list we have stated that we can not send queens C. O. D. This C. O. D. is a bad business any way, for the reason that there are always more or less people who will be short of money, or change their minds when the goods get to their station. Bees are perishable property, and it is a good deal of work to put them up ready for shipment, to say nothing of express charges both ways. Certain kinds of goods can be sent C. O. D. without much difficulty, especially where there is considerable value in very small compass. A watch, for instance, may be sent to the purchaser, and he may be allowed to examine it before paying; but to think of doing the same thing with a

swarm of bees is out of the question. The shipper ought to have the cash in his pocket, or an order from some good reliable man, before he even puts them up.—I am much obliged indeed, friend R., for the sample colony you shipped us, but I am sorry you thought best to take all this trouble.—In regard to the foul brood, it is understood that no man advertises bees for sale, or offers them in any other way, who has foul brood in his apiary. If any one who reads the bee-journals knows of any such thing being done, he should notify the editors at once, and have it put down.

In regard to whether the bees be Italian or hybrids: When anybody buys bees by the pound at half the usual price, or less, he certainly ought not to ask whether they are blacks, hybrids, or Italians; and, in fact, at this season of the year, when bees by the pound are bought for building up colonies, it does not make any great difference what race of bees they are, for the queen will fix the purity of the colony in a very short time herself. We have nothing but pure Italians in our apiary, and do not expect to send out any other kind of bees by the pound; but our prices are very much higher than what you put them, friend R.

Later.—The bees are at hand, and we call them fine Italians, and worth a good deal more at this present crisis and season than what friend Reed advertises them for.

TOBACCO COLONY.

GIVING UP TOBACCO AFTER USING IT FOR FORTY YEARS; WHAT A LITTLE GIRL CAN DO.

MY father takes GLEANINGS, and he keeps bees. He has 48 colonies. He has been feeding waste honey, but he carries it about three hundred yards away from his apiary, to prevent robbing. We live on a farm. I go to school, and like my teacher very much. Grandpa and grandma live with us. Grandpa has used tobacco for forty years, but has not used any now for three months, and says he is not going to use it any more. Don't you think he deserves a smoker? I am going to have my flower-garden close by the bees this summer. I have already set some honey-suckles and jasmine to make shade for them. We had lots of honey-dew honey last year. I do not like it. I am starting some watermelon-plants for early use. I fill an egg-shell, and place the shells in a box of dirt; and when they are nicely up, loosen the shell from the dirt, and transplant to the garden, without disturbing the roots. They will not stop growing. MAY SIGLE, age 12.

Butler, Bates Co., Mo., April 19, 1885.

To be sure, your grandfather ought to have a smoker, friend May, and I am very glad of the opportunity of sending him one.—Your idea of starting watermelons is a real good one. We have been at work on the same thing with thin paper boxes, but the weather has been so cold we could not set them out, and our melon-plants got pot-bound.

I am just commencing in bee-keeping, and I learned from Mr. Wood Trenor that you would give any one a smoker who would quit chewing tobacco, and I will say this: If you will send me one I will

quit; and if I do not, I will send you the money for it.

DOCK CONNOR.

Madisonville, Texas.

Friend C., the smoker was sent you some time ago; but we now notice that you use the expression *quit chewing*. In offering a smoker I always use the term *using tobacco*; for I can not see that it makes any difference whether one chews or smokes—it is all tobacco-using. Now, if you did not mean that you would give up the use of tobacco in every form or shape, we trust you will be gentlemanly enough to return the smoker, or pay for it.

I have quit chewing tobacco; chewed only three years. It would kill me to chew three years more. If you think you can give me a smoker, send one. If you can't give one, send one by mail, and I will send you the money.

J. G. MILLS.

Moulton, Texas, Jan., 1885.

Friend M., there will be no charge for the smoker, providing you give up the use of tobacco in every shape and manner, as mentioned above.

I have used tobacco for several years. On Jan. 1 I resolved to abandon it, and threw away my pipe, and kept good my resolve so far. If your offer of a smoker is yet extant, please send me one. I wish it as a reminder of my promise; and should I fail, I will pay for it, and send you a new name for GLEANINGS besides. The battle will be hard, but I mean to win it, asking God to help me.

Dahlgren, Ill.

F. C. VANDERVORT.

I am (or, rather, *have been*) a tobacco-smoker for ten years. I have often thought I would quit using the filthy weed, and at last made up my mind that, with God's help, I would stop. If I am entitled to a smoker, you may send me one. If I commence using tobacco again, I will pay you for two. Not many bees in this part of the country, but what there are do well. Honey sells for 20 cents per lb. for extracted, and 25 cents for comb honey.

Hepler, Kansas.

M. A. TIMBERMAN.

FROM A BROTHER WHO PREFERS TO PAY FOR HIS SMOKER, SO IT WILL NOT BE ANY MORE A REMINDER.

I was out yesterday, although the mercury was at zero, and sold a few pails of honey; and by borrowing some I am able to inclose \$6.00, which please find. After squaring my account you will take the rest to pay for that tobacco-smoker I had of you. I find that it is more of a reminder of the fact that I have received your goods without paying for them than any thing else, and now I do not feel that I have taken something for nothing.

Carlton, Mich.

J. S. COLE.

Friend C., we thank you for paying for the smoker, but we hope it is not because you have gone back to tobacco again. It looks a little that way, although you do not say so.

A BROTHER WHO FEELS HE NEEDS OUR PRAYERS.

This is the first time I have addressed you. I have had a hard battle with tobacco since Christmas. Will you pray for me, that I may be fully able to abstain for ever, God being my helper?

Summersville, Pa.

ISAAC A. CLARK.

Most surely I will, brother C.; and may the kind Father help, strengthen, and sustain you.

ANOTHER VOLUNTEER.

I think I will lay claim to one of your smokers. I thought I would quit using tobacco before asking you for one. I have a swarm of bees, and I am also running a potato-ranch, and I am all alone; so if you will send me a smoker I will pay you for it, if I use tobacco in any shape or any form.

WM. HILDERBRAND.

San Bernardino, Cal., Oct. 19, 1884.

My daughter's husband is a young man 24 years of age; he is going to try bee-keeping. He has borrowed GLEANINGS to read. He likes it very much, and is going to take it this year. I have been trying to have him break off smoking. He says he will not smoke again if I will write for a bee-smoker. If you think it worth while to send him one, if he smokes I will send you the money for it. This is from a great tobacco-hater.

MRS. H. N. FOSTER.

Richford, Vt., Dec. 16, 1884.

I used tobacco 28 years. Over four years ago I quit, and have in no way used any since GLEANINGS reminded me every number, till at last I overcame the habit. If you think I deserve a smoker, send one to me.

ISAAC EBY.

New Germantown, Pa.

I have given up tobacco. Please send smoker. I will pay you for it if I take up the habit again.

Gonzales, Texas, Feb. 23, 1885.

M. BROERS.

FROM A FLORIDA FRIEND.

If I again return to the use of the weed I'll consider myself your debtor for the price of the smoker.

T. C. WAGGH.

San Antonio, Florida, Nov. 29, 1884.

I would say in regard to tobacco, that I have quit chewing and smoking, although never an habitual smoker or chewer.

CHAS. BLATHERWICK.

Bryan, Texas.

I happened to see where you promise a Clark's smoker, or give it as a reward to all who abandon the use of tobacco. This I have done, after using it 24 years. If I am entitled to the smoker, please send and oblige.

R. F. CARY.

Poca, Putnam Co., W. Va.

Bro. Richard Henderson, close by me, has been moved to quit using tobacco; says it is a fight, but is determined never to use it again. I told him of your plan. Should you see fit to send him a smoker, send it to Richard Henderson, Benton Ridge, O.

Stanley, Ohio.

S. H. BOLTON.

Three months ago I laid tobacco aside, after being its slave 20 years. I promise that, if I ever break over and rob the tobacco-worm of his rations in any form I will pay you \$1.00 for the same. I have five stands of bees in good condition. I like the L. frame the best.

WILLIAM DUCKWORTH.

Greenwood, W. Va., April 22, 1885.

FOR JESUS' SAKE.

My father is 57 years old, and has quit tobacco after having used it 45 years. He quit it for *Jesus' sake*.

W. D. GILLILAND.

Abatis, Mo., March 11, 1885.

For Jesus' sake! That is the last item on this page, dear friends; but, does it not sum it all up? Not only this little page of print, but these pages of our life, the lives that you and I are living?

THE CALIFORNIA-SUN-STRAINER.

A CHEAP WAY OF MAKING AN AUTOMATIC AIR-ARRANGEMENT FOR RENDERING WAX.

THE following, from the pen of friend Muth-Rasmussen, whose portrait we gave on page 193, we have taken from the *Pacific Rural Press*.

As I have never seen it mentioned in print, I will here give a description of this valuable apparatus, which ought to be found in every apiary in the land.

The sun-strainer is a triangular box, something like a corner cupboard laid down on its back edge. It is lined with tin, and covered with one or more window-sashes. A sun-strainer, covered with a sash of six 10x16 lights, is large enough for an apiary of 100 colonies, run for extracted honey. This sash should fit bee-tight, to prevent bees from crowding in, which will invariably result in their death, as either the heat will kill them, or they will worry themselves to death trying to get out through the glass. About half way between the cover and bottom edge is placed a strainer-plate, made of sheets of tin, perforated with $\frac{1}{8}$ -inch holes, three-quarters of an inch apart, and fastened to a light wooden frame under the tin. Wire-cloth should not be used for the strainer-plate, as it is difficult to

the cappings goes through the tube into the honey-room, where it is collected in a can or separate tank. The sun-strainer should therefore have a slight inclination toward the house, that the honey may flow freely and not remain standing between the different layers of wax formed, as more cappings are added from day to day. The honey will be slightly darker than the extracted honey, and should be kept separate, to be either sold as a darker grade or kept for stimulating or feeding the bees. It will be a good policy to keep on hand half a ton or more of such honey, as it may save the bees from starvation during one of our not unfrequently dry seasons.

Most of the refuse will remain on top of the strainer-plate, from which it can easily be scraped off, while it is warm. If the plate becomes clogged, the holes may be opened with a carpenter's compass or similar tool. This should be done when the plate is cold. The wax should be cut out with wooden paddles, choosing a time when the wax is tolerably soft. Never use a metallic tool for this purpose, as it is liable to cut the tin lining, and it is almost impossible to mend such an injury after the tin has been coated over with wax. In very hot weather some of the wax will run through the tube and partly fill it. When the sun-strainer has been emptied, the extension tube should be taken off and the wax pulled out of it. If the wax sticks, the tube may be laid in water, which will dissolve the honey and loosen the wax. The wax is then placed in a tub of water and afterward re-melted. It is hardly necessary to say, that the glass should be kept bright, clean, and free from dust, in order to have the best effect. The sun-strainer should be housed during the winter, but the frame may be left in its place all the year round.

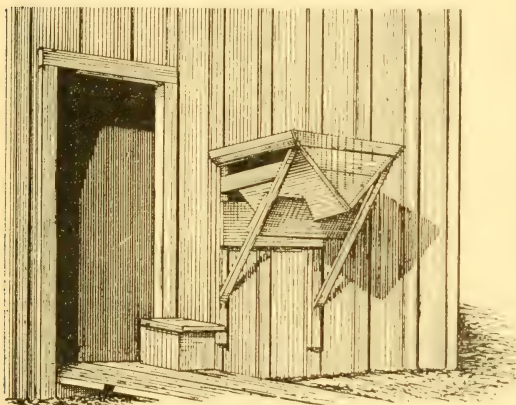
ANOTHER STYLE OF SUN-STRAINER.

Is built fast to the wall, has a sloping glass cover, and, under this, a close-fitting shutter, hinged at the top. Through the hole in the wall, closed by this shutter, the sun-strainer may be filled and emptied from the inside of the honey-room. This is an advantage when bees are inclined to rob.

FORMER USE OF THE SUN-STRAINER.

When I first learned the bee-business, extractors were not known on the Pacific Coast, and, as far as I know, I was one of the first, if not the first bee-keeper in California, who imported an extractor from "the States." It was my old friend and benefactor, Mr. Thomas A. Garey, of Los Angeles, who drew my attention to the advertisement of an extractor in the *American Bee Journal*, specimen copies of which were occasionally sent him; and to him justly belongs the honor of the first introduction of the honey-extractor into Southern California. Previous to that event, all honey not sold as comb honey was strained by means of the sun-strainer. The sun-strainers were, therefore, then of necessity very large, the one with which I first worked being 7 feet 6 inches long, and covered with a heavy door of glass. It had a melting capacity of a ton a day in hot weather. As all the honey was thus strained, the term "strained honey" became fixed in the minds of the public, and has been slow to give way to the newer term, "extracted honey." All the honey-comb was, of course, melted up with the honey, the whole as it was cut out of the supers being dumped into the sun-strainer in a promiscuous mass, and an immense amount of wax was made at that time.

Considerable has been said about these sun-strainers, but I have not learned of anybody who has made them a practical success here in the States, unless it is friend Poppleton, whose articles were given, with an illustration, on page 521, Sept., 1883. Wherever



THE CALIFORNIA SUN HONEY-STRAINER.

clean, and easily gets clogged or broken. A semi-circular handle is soldered to each end of the strainer-plate. Underneath is placed four little tin brackets, soldered to the vertical ends of the sun-strainer, two at each end, to prevent the strainer-plate from tilting sidewise. In one of the ends of the sun-strainer, and as near the bottom as possible, is soldered a $\frac{1}{2}$ -inch tube, four inches long. Another tube of the same diameter, a foot or more long, telescopes over the short tube, and goes through a hole in the wall into the honey-room. Some place the sun-strainer in a scaffold, standing apart from the house, but it is better to have it resting in a frame bolted to the south side of the honey-house, where the sun will strike it nearly all day. The sash should be hinged over the tube so that when it is raised it rests against the wall, where it may be fastened by a hook or other device.

USE OF THE SUN-STRAINER.

When the cappings have been drained sufficiently, they are placed on the strainer-plate, and the sun-strainer closed. The heat of the sun melts the cappings, and as soon as the wax gets below the strainer-plate it cools and forms a solid cake. The wax never gets overheated in this way. When made from new white cappings, it will always be of a bright yellow color. What little honey adheres to

the heat of the sun is sufficient, it will doubtless be not only a labor-saving institution, but it will give us a finer quality of both wax and honey than is usually obtained by means of fire heat or steam heat. The machine mentioned above seems very simple and easy to construct; and the idea of having it against the honey-house, so that the honey would run inside, is quite ingenious.

A LETTER FROM MRS. AXTELL.

SHE ASKS SOME QUESTIONS ABOUT THE WAY OUR BEES WERE PREPARED FOR WINTER.

DEAR FRIEND:—I should like to ask you a few questions about how you prepare your bees for winter, that they could come out a "booming" this spring. We have lost more than half of the 244 colonies we had last fall; now 42 marked good at Home Apiary, wintered in cellar, and 45 weak, many of which will have to be helped by brood or bees from the better colonies, or can not even save their queens at this late date.

At the Timber Apiary, only 8 good ones; about 30 that will barely save their queens. We find some dead every time we go through the hives; 38 left from the 125; we thought 119 would live, wintered in cellar. We knew they were in poor condition to winter last fall; but we were both of us in such poor health that we let them go.

I should like to ask how many combs per colony you leave in. Do you extract all the honey before feeding, and about how many pounds of sugar do you feed per hive? What month, and what time in the month do you feed for winter? Do you winter all out of doors? and do you sweep the snow away from the entrance? or if a hive seems clogged up, do you run a wire or stick in to clean out dead bees? Is it advisable to lean a board up in front of the hive, to keep the snow from covering the entrance, and let the snow alone? Would you shovel snow around the hives? How large an entrance do you leave open in winter? Do you extract the honey before feeding sugar syrup? What kind of a feeder do you use? Do you clip your queens' wings in the spring? We do not see that it hurts them any, and saves a good deal of trouble in getting them off the trees. Do you put an enameled cloth under your chaff cushions? If so, I should think it would not be porous enough to let the dampness pass off. Do you use the same oil cloth to put on top of the sections to keep the bees down? If so, is there not propolis enough on it to soil the sections? or do you clean the oil cloth, and how?

We had a circular sent us the other day by a company that makes oil-cloth ducking, etc., for sale. I wonder if you could not get it at reduced prices for bee-keepers to make covers to hives, as it would be so light, and not leak. Our hive-covers leak some, and we are thinking of getting the cloth and cover and paint.

Tell the girls that a part of the barrel of hats sent me were sent to the Indian Territory, and sold; the best were sold, and the money was used by that earnest missionary, S. R. Keams, to help build a church last year. This past year, more hats were sent him, and he is disposing of them to help build his third Indian church this coming season.

Of course, it is not all done by hat-work, but it

helps, and those given away also help. One of his Sabbath-schools he said was nearly half built up by the children who had been induced to come by the present of a hat. The rest of the hats were sent to Talladega, Ala., for a freedmen's school.

If your girls see fit to send me another barrel of hats I will see that they are put to a similar use as the last. I always give the donors credit for things sent, and ask them to acknowledge them.

My health has been very poor this past winter; and I am now not able to sit up any; but hat-work is God-given work, for me to employ the hours spent on my bed to further his work, and to help fill my life with sunshine and happiness in that I can do something for his needy ones.

Roseville, Ill., Apr. 25, 1885. MRS. L. C. AXTELL.

My good friend Mrs. A., I am very sorry indeed that your health is so bad again; and yet it seems wonderful to think of your working, day after day, while you are not able to sit up. If I should ever be confined to my bed, I think that is just what I should want to do—work. If I am correct, almost if not quite every summer, when the bees begin to get out and store, you soon follow suit. Surely, Mrs. A., you are able to employ some careful person to put your bees in proper order, are you not? With the precarious state of your health, it seems to me your first duty is to have some one with you on whom you can depend. In my own case, I scarcely lifted a hand personally to fix our bees for winter, and a great part of the colonies I did not look at, but advised and directed all through. We left from five to eight combs in a hive, according to the strength of the colony. We did not do any extracting at all, and the amount of sugar fed was dependent on the size of the colony. We did not weigh at all, but just kept feeding until the combs were solid slabs of sealed stores. The bees were crowded into a pretty compact cluster in the center of the combs, usually having a little patch of brood there when the feeding was finished. Perhaps their stores averaged from 15 to 20 lbs. per colony. We commenced feeding in September, and were all through by the middle of October. We winter our bees all outdoors. We never meddle with snow around the entrances at all. Several times last winter our apiarist was a good deal worried about it. I told him I was sure that snow over the entrances never did any harm. The loose chaff over the frames, with only coarse burlap to keep it from rattling down among the bees, made it impossible that they should suffer from lack of ventilation, no matter what happened to the entrances.—We did not run any wire or stick in the entrances to clean out the dead bees. The entrances were left open full width, exactly as they were in the summer. With chaff hives we never put any thing in front of the entrances to keep away the snow, or keep the sun from shining on them. I would not shovel snow around the hives, because it would be likely to create disturbance with the bees. If the snow falls around the hives, even so as to cover them all up, well and good; but I do not believe shoveling can be done so as to avoid disturbance.—We did not extract any honey at all, before feeding; but the rea-

son why we did not was that, having so many colonies in one locality (400 to 500), our field is overstocked, and they consumed pretty much all they gathered—honey-dew with every thing else. Selling bees constantly by the pound, as we do, tends to work up almost all natural stores into brood, leaving the way open for sugar feeding.—We use principally the bread-pan feeder, figured on page 32 of our price list. To keep the bees from drowning, a piece of cheese-cloth is laid loosely over the top. We do not clip our queens' wings at all. You know we rarely have any swarming, because we keep selling our bees by the pound to such an extent that a hive seldom gets sufficiently populous.—We do not use an enamel cloth for wintering—only the sheet of coarse burlap mentioned before. After putting on this sheet of coarse burlap we put about a peck of

O. M. BLANTON, AND THE PLACE WHERE HE LIVES.

A VIEW AMONG THE BEE-HIVES.

YOU remember friend Blanton, I suppose. He is the man who helped Bro. Jones play tricks on me when we were down in Cincinnati; said he would stop using tobacco; said he wanted a smoker, etc. Well, he got the smoker. By the way, I think he got several smokers. I should think he would need several, shouldn't you? Just look at his bee-hives. He is the man who has them stuck up on stilts, you know.

Dr. B. gave me the picture that I had the above engraving made from when we were in New Orleans. He had quite a lot of pictures, and I picked this out from among them. I asked him if it was because of high water that he stuck them up on stakes in



O. M. BLANTON'S APIARY. GREENVILLE, MISS.

loose chaff around the edges, making it impossible for the bees ever to push up, and so get around the ventilators in the cover.—We have not raised any section honey for some years, of any account.—We do not use any kind of oil cloth for hive-covers. Tin costs but little more, and we think it much the cheapest in the end.

I shall have to explain to our readers, that, some time ago, in response to a letter from Mrs. Axtell, we sent a barrel of ladies' hats, to be used in the mission work in the Indian Territory. These hats were old ones, such as can be found in almost anybody's garret. Mrs. A.'s explanation tells what became of them. Our factory hands will at once scrape up another barrelful or more; and if any of the bee-friends feel like assisting in the good work, Mrs. A. will give the required directions as to where they are to be sent.

that way, and he said no, it was only to have them handy. He is quite a big man, and I suppose it makes him red in the face to stoop over, so he has got all the bee-hives "histed up like." You notice he has lots of trees around too. Yes, and there is one stump. I do not like stumps; they bother our sulky plow. I guess, however, the doctor does not plow any around *that* stump. Sometimes his bees swarm and hang upon those trees. That is what he has that step-ladder for. Well, you see it takes an awful sight of legs to put legs on so many hives, and so he has two hives on one set of legs, in some places. I wish he would tell us if he likes them as well made that way. Come to think of it, I rather expected he would write a letter to go along with this picture; but may be he will send us one to be put in next time.

APIS DORSATA ONCE MORE.

WILL THEY BEAR DOMESTICATION?

FRIEND ROOT:—*Apis dorsata*, after staying for twelve days with me, has absconded, and I hasten to give you the results of my first experiment with this bee.

1. Why did the bees abscond? On examination of the comb I found about half a pound of brood had been jammed into a fold of the comb made, when putting the comb into the basket for transportation from the hills. It was smelling very rank, and this of itself was enough to drive them off, doubtless.

2. I am not sure they had a queen. Before I got them into shape, about a quart of old bees swarmed up on a limb of a tall mango-tree, and after two days they left. At first the entrance to the hive was too small, and I think they could not readily find their comb, and so left. The queen might have been among them.

3. Perhaps this bee can not be made to stay in a hive at all, yet I am not at all satisfied that this is the case, and shall not be without much more experience.

We have gained some knowledge by this experiment. The young bees, when first hatched, are long and slender, very graceful in their shape and movements, of a soft dark yellow, approaching brown, which changes as they grow older. The abdomen grows fuller, and black bands appear, until the bee appears much darker, not only on the abdomen, but all over. The head, however, at first changes to jet black.

As there was a very little unsealed brood when I got them, and all hatched out in twelve days, I judge the time from egg to bee is about 21 days, as with common bees. I have a swarm of the *Apis florea* under observation (this is a unicombee also). I am struck with many things in common in the habits of these two kinds of bees, and have an idea that the study of the *Apis florea* will show us how to manage the *Apis dorsata*. But much observation is yet necessary. The comb of the *Apis dorsata* left with me measures about 2 ft. long by 1½ ft. deep. The honey-comb and brood-comb are quite distinct. The honey-comb is placed always highest up on the limb of the tree on which the nest is built, and is called by the natives the "honey-chattei." It does resemble a native chattei not a little in shape. From this, which is on the right in my comb, the brood-comb extends to the left, new comb being added along the whole edge, from the honey-comb around to the limb again. The honey-comb is 3 inches thick in its thickest part, but built in a cylindrical form. The natives say they have seen this honey-chattei 6 inches in diameter. The cells are 1½ inches deep, and less as the slope changes. There are three honey-cells to the inch. This comb is beautifully white. The walls of the cells are almost transparent. Honey is also deposited among the brood, but it seems to be of a different kind from that in the honey-chattei.

The brood-cells are from ½ to ⅞ inch deep. The number to the inch varies from 4 to 4½, or 23 cells to 5 inches. The brood-comb varies a little in thickness, and is about 1½ inches, and is a light brown in color. These bees on the comb form one of the most beautiful sights in nature I ever saw. During their stay they built comb and brought honey and water, but they did not at any time work as if they

were happy. Just before leaving there was great running to and fro, and preening of wings and legs, preparatory to flight. Not more than half a dozen bees were left. I put one, just hatched out, on the alighting-board of an *A. indica* swarm, and she immediately marched in like a queen, and the bees all made way for her. I suspect they got over their surprise and slew her, but I have not seen any results of such punishment. So much for experiment No. 1 with *Apis dorsata*.

P. S.—Wife says I've no eye for color; that, when first hatched, the *Apis dorsata* are light orange, which changes to darker orange, and then the black stripes appear. She says you don't know what a *chattei* is, and perhaps she is right. It is a cylindrical vessel shaped like a rather flat onion, only it is open on top, and the edge of the hole comes a little above the vessel, and then flares back somewhat. It is, in fact, a jar. This shape proves a very curious feature in the *A. dorsata* comb, and, when filled with pure white honey, is a sight worth seeing.

A. BUNKER.

Toungoo, Burmah, March 18, 1885.

Friend B., these are matters of great interest to us, and I would suggest that you get another swarm of *Apis dorsata* and experiment with them further. If you are out any in the way of funds in accomplishing this, let me know, and I will indemnify you. I do not quite make out how it is that a single comb built on a limb is in a cylindrical form. If I understand you, the comb of the *Apis dorsata* is not much different in dimension of cells from our own honey-combs. The large cells you describe, I should infer, are drone cells or what we sometimes call "store cells." And, by the way, does the *Apis dorsata* have drones similar to ours?

THOSE FIVE COMBS, ETC.

MORE ABOUT THE "NO-POLLEN" EXPERIMENT.

ON page 232 friend Root seems to desire further knowledge regarding the experiment I gave on page 231. I took away all the combs the colony had, and gave them five clean empty combs, which were very carefully examined, to see if they contained a single cell of pollen, not one of which was found. This was done about Sept. 15th to 20th. I now fed them 2½ lbs. of sugar syrup each night for ten nights in succession, making 25 lbs. fed. As the queen was not laying at the time the combs were taken away, I examined the colony after feeding five days, to see if any brood had been started, for I have never known a queen to start laying, in this locality, after she has once stopped, by feeding them for that purpose, as friend Root, Prof. Cook, and others, claim they do with them.

A careful examination at this time revealed only sugar syrup, for neither eggs nor pollen was found. I again examined them on the morning of the eleventh day from the time I commenced to feed, at which time I found no eggs nor pollen, although a space was left in their combs for a brood-nest, or, as I call it, a nest to winter in. Hence the insinuation of Prof. Cook, on page 238, that I guessed at the matter, is groundless. Again, I examined the colony about Oct. 25th, when tucking them up for winter, and found them clustered in and about their winter-nest, with no brood, nor any that look-

ed like young bees; and I firmly believe that there was not an egg laid by the queen, nor a bee-load of pollen gathered by those bees after I commenced to feed them. As far as the getting of meal is concerned, which Prof. Cook spoke of, by way of accounting for the absence of pollen husks in their excrement, I think that is far fetched; for I never saw bees take meal in the fall, and much less when no brood was being reared.

Well, where did the pollen come from which friend Cook found? We will let him answer. On March 10th he writes me, after he had received a piece of comb I sent him, taken from where the bees had died, which, the reader will bear in mind, was taken from near the top of the comb, and not from where the bees would have had their brood and pollen last fall, had they had such, "I find that the white substance" (I supposed this to be chyme) "at the bottom of the cells is the web or cocoon of once larval bees. To this I find pollen grains attached. I find a little pollen at the bottom of the cells, which, to the unaided eye, seem entirely empty; also some under the honey (syrup) on the side of the comb which you cut off. I find pollen, which the microscope reveals, in almost every cell." Hence it will be seen that these particles of pollen were scattered about the bottom of all these cells when the combs were given to the bees; for how else could it get under the syrup where Prof. Cook found it?

It will also be noticed that he did not find any pollen, except by the aid of the microscope; and when this was brought into requisition he finds a little in almost every cell, thus showing that bees use pollen in other ways than by the cellful, or half full, as we usually see it.

Why I have been thus particular in going into the minutia regarding this experiment, is because it has a direct bearing on the pollen theory, as it is applied to our wintering troubles. If I had only this one case, we might call it exceptional; but since this colony died I have lost three other colonies of diarrhoea (two in the cellar), which had only sugar syrup for stores, as far as the unaided eye could see.

I am asked, on page 232, "Did the bees have dysentery badly enough when they flew out so as to spot the snow?" Well, if they could have flown, the snow would have been spotted, I assure you, friend Root; for all of one end of the frames, and one side of the hive, was all smeared over with this excrement, which had all the appearance of being the same identically with that "which we are familiar with;" while the stench was as bad as any I ever smelled; and this was the same with the other three colonies. In fact, sugar syrup has shown no advantage over natural stores with me; and I see in GLEANINGS, and the other bee-papers, that others have had similar experience.

Now in closing I wish to ask: If bees do have the dysentery, and die with it, where no pollen can be detected by the unaided eye, in the combs that are placed in the hive for wintering, can the no-pollen theory be of any benefit to the average bee-keeper? Again, if we must wait till the first of November before feeding our bees, for fear that they will put pollen in our clean empty combs which we give them, as Prof. Cook thinks my bees did, can the no-pollen theory be made practical? Our best apiarists tell us that September is the month to prepare bees for winter, so that their stores may be sealed, and

all is quiet early in the season. Once more: In the light of the above experiments, how are any, except thorough scientists, to know whereof they affirm regarding the "no pollen no brood" theory? and how does friend Root know but that his bees in his greenhouse and other experiments had many particles of pollen in their combs, but refused to rear brood from some other cause? Gentlemen, what do we know on these points, any way?

Borodino, N. Y., May, 1885. G. M. DOOLITTLE.

I think, friend D., we know something, even if we do not know it all, as yet. In regard to my experiments in the greenhouse, whether there was pollen remaining in the comb or not, I succeeded in having the bees rear brood and stop rearing brood at pleasure by meal feeding, and by stopping the meal feeding. I did this during every month of that winter, until I was abundantly satisfied that there was at least a close connection between the pollen and brood. Whenever they exhausted their stores of meal, brood stopped, or very shortly after. By the way, friends, will it not be best to drop this pollen matter—at least for the present?

THE LATE DISASTERS OF WINTER A BENEFIT IN ONE WAY.

ALSO A WORD IN REGARD TO THE VETERANS WHO DO NOT WRITE ANY MORE.

I GATHER from correspondence through Central Iowa, that fully 80% of the bees that have been wintered outdoors are dead. I can see but one good result in it. Many of the bee-keepers have persisted in keeping the *blacks*, and it's generally that class (here) that left them out, unprotected, and are now wondering what's wrong. I think the Italians will have but little difficulty in taking the lead from this on.

What has become of Mrs. Axtell, that we hear no more of her? Probably (as she is an invalid) she has been in the furnace of affliction, and writing may be a burden. Her articles are always laden with good things. And then there is Hasty. Since his splendid translation of Virgil, has he put his candle under a bushel? And then the funny man who usually writes about Mr. Duster, "Under the Box-Elders;" has he gone to Congress?

HOW TO MAKE A CAVE.

Will not some of your correspondents tell us just how is the best way to arch over a cave with some good material that is cheap and will resist decay? Wintering bees in properly ventilated caves, in this latitude, is the coming way. D. E. BRUBAKER.

Maxwell, Ia., April 23, 1885.

Friend B., I believe it is a fact, that more black bees have died, and do die, than Italians; but I do not think the blacks any less hardy; in fact, I have sometimes thought that it was the other way. But the reason is, I think, the one you have suggested.—Mrs. Axtell answers for herself in this present number. As near as I can find out, friend Hasty goes by fits and starts somewhat, like many others who have much talent for serving the people. I have been expecting every little while that he would take a notion to write some more. The same with Mr. Duster, of the box-elders. May be he has lost his bees, and has got sour, but

we hope not.—Your cave business is just what I have been studying about: in fact, I do not know but I should have had a small Mammoth Cave down by the carp-pond before this time, if it were not for that difficulty you suggest—getting something to arch over, to hold up the dirt. I am afraid of boards, because they would rot or break, and may be some of the children would get buried up. I wonder if the stoneware men can't make us a great big horse-shoe tile, big enough so we could walk in and carry in bee-hives. We could extend it as we wanted more room, and it would last for ever.

WIDE, OR BROOD FRAMES, AND SEPARATORS.

FRIEND HEDDON'S EXPERIMENTS AND CONCLUSIONS IN REGARD TO THEM.

I HAVE been one of the pioneer opposers of wide frames and separators. At one time I thought of separators as many now think of $\frac{1}{2}$ -lb. sections; viz., that they cut the surplus departments up too small; but I have learned better, and I have for several years publicly said that separators are no hindrance to the amount of surplus we may receive, if other fixtures are properly arranged. Such practical honey-producers as Dr. C. C. Miller, and Oatman Bros., persuaded me to again give separators a thorough trial, and two years ago I did so by making 350 wide-frame supers (one story or tier of sections high), and used these side by side and over and under 300 of our cases, all worked on the tiering-up plan. I used separators of both wood and tin, about 1800 of wood and 300 of tin. My apprentices and neighbor Shirley assisted me in using and testing them. I have also used about 40 wide-frame supers two stories high. I have done my best to give these fixtures a comparative trial for the past two seasons, and I have used them in such quantities as to give us a physical as well as mental education regarding their merits. According to my present light I must render the following decisions:

1. My case is the best style of surplus receptacle I know of, to use without separators, and admits of no improvement by me.
2. I would rather abandon separators altogether, than use them in two-story supers.
3. I do not think there is any system of using separators, equal to the wide frame, when used one story high.
4. I would use no system of surplusage (either for comb or extracted honey) that did not give me the advantage of tiering up.
5. I prefer tin to wooden separators.
6. There are many advantages in the use of separators, and many in the non-use of them, and each person must be governed by his own special circumstances.
7. Their use or non-use need not affect the quantity of surplus secured.

I mean to continue the use of separators, and I am now perfecting a different style of super which I think will aid us greatly in their quick and easy manipulation, as well as their usefulness.

I can not see why my case is called "the Heddon, or Moore case." There is scarcely the least similarity between them. Bro. Moore's does not incase the sections. It is a rack to hold them in place only, if I understand the description correctly.

Downagiac, Mich.

JAS. HEDDON.

PERMANENT EMPLOYMENT.

Friend Tisdale tells us the Secret of it.

"WHOSO COMETH UNTO ME, I WILL IN NO WISE CAST OUT."

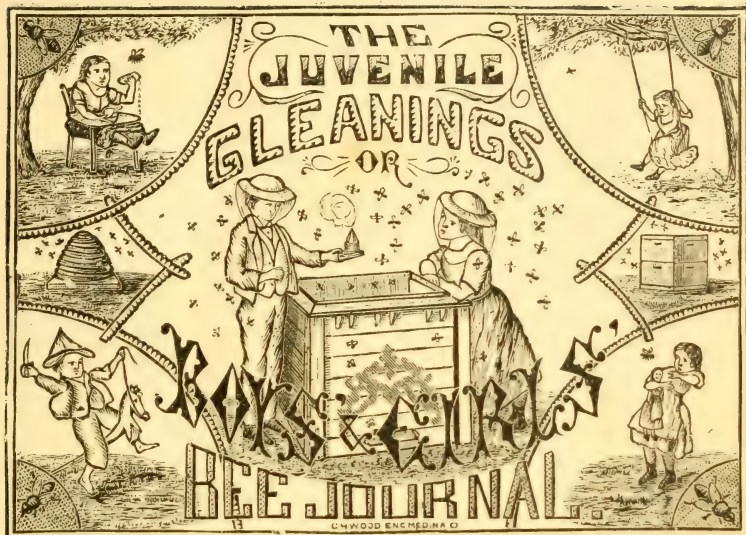
ON page 139 you gave most splendid advice to those out of employment. Now, friend Root, that was just my case two years ago. I was out of employment, used tobacco, etc. I tried to get work, but failed. I got discouraged; did not care what became of me; but I got to thinking over one of your sermons which I had seen in GLEANINGS. I got right down and prayed to God to help me, and he heard my prayers, and I have tried to keep his commandments ever since, but failed in some instances. Now, a good many men could not stay more than a short time with this man I work for. They said he was too hard a master, and they told me so; but I did stay with him. Perhaps it was because he was a Christian and they were not; and, what do you think? With so many out of employment, to-day there were five of the best farmers of Richfield came to me and wanted to hire me, and have their men sent adrift. No, I told them I was going to "stick to the old lady."

Now, young men, those of you out of employment, put your trust in the Lord Jesus Christ; keep his commands; go into the country; work for 30 cts. per day; be honest; build up a character; stick to good principles; do as your boss wants you to, if it is nothing more than to knock down a smoke-house and build it up as well as you know how; and whosoever does this will never want for work, and after a while get the best of wages. Do right, young man. May this be your motto, your shield, and your might, for the world ever honors true courage in man. Then never be afraid or ashamed to do right.

A. H. TISDALE.

Richfield, Minn., Feb. 23, 1885.

Friend T., I think you have struck the true secret. The man who gets down on his knees, all alone by himself, and asks God to help him do right, will, if he is at all consistent, get up and go to work in a way that must win him plenty of friends anywhere. If he is working for Christ he is working for his fellow-men; and the Master has said, "Inasmuch as ye have done it unto one of the least of these my brethren, ye have done it unto me." If you are working for Christ you must be working for those around you; and this kind of service never fails to be appreciated, sooner or later. There are those who make a profession, who are out of employment. I know very well; but I have never yet failed of being able to find that there was trouble somewhere, when I got acquainted with such people. A man who insists on faithful, honest work, is often called by many a hard man, when he is simply a just man; but one who has the love of Christ in his heart should be able to get along pleasantly, even with a man who is a hard man. I have sometimes felt a good deal of pleasure in finding that I could, by an extra effort, get along pleasantly with those who have a reputation of being difficult and hard to please. And such little victories do one good; for if we get along easily with those who are difficult, we shall have no trouble with the rest of the world.



He that is faithful in that which is least, is faithful also in much.—LUKE 16 10.

MYSELF AND MY NEIGHBORS.

Thou shalt love the Lord thy God with all thy heart, and with all thy soul, and with all thy strength, and with all thy mind; and thy neighbor as thyself.—LUKE 10:27.

AMONG the piles of things thrown on my table, from our heavy mails, there came yesterday a little pamphlet. I picked it up and absently turned to the first page. The words I read startled me. I put it in my pocket this morning, and at breakfast I read it aloud to our family circle. The words took hold of every heart, I believe, just as they took hold of me; and if I am not mistaken, the glances that were exchanged indicated that the words went home to other hearts than mine. Do you want to know what were those words that gave me a start—yes, that startle me now, and trouble me, because they remind me that I am a guilty sinner in God's sight? Well, here is the little sentence:

I had been thinking how strange a thing it was that I disliked so many people, and liked so few.

The next words were right in the same line, and they make me even now catch my breath, as it were, and call out from the bottom of my heart, "Lord, help!" Here is the next sentence:

Only to look at some persons seemed enough to put me out of humor, and make me feel like saying cross things.

And now I think I will give you the whole of the little pamphlet.

THE LANTERN PEOPLE.

I have been thinking how strange a thing it was that I disliked so many people and liked so few.

Only to look at some persons seemed enough to put me out of humor and make me feel like saying cross things. But there were others although not nearly so many of them whom I loved to meet, and whom I could hardly be cross to if I tried. I had been thinking about this, when I fell asleep and had a dream.

I thought I was carried away to a strange country where it was always dark. No morning ever came there, the sun never shone, and there were no stars in the sky. Yet people were living there, and I could see them walking about. But they were very strange people, such as I had never seen before, nor heard of, nor even thought of. I called them the *Lantern People*, because they looked like great lanterns with lights inside of them that shone through. And they were of a very strange shape, for they had ever so many sides, and on every side was a picture. Some were pretty and some were ugly pictures. Every person I saw had both pretty and ugly sides.

Of course I was very much surprised, and stood looking a long while; for the people could not see me, though I could see them and was close to them. On some of their sides were pictures of snakes, wasps, and pigs; on other sides, of doves, lambs, flowers, and such beautiful things. And now I want to tell you a very curious thing about the way these people did when they met each other. I noticed when a man met another in the street, he would quickly turn around one of his sides, so that the man he met could see it and nothing else—that is, nothing but the picture that was on the side turned toward him.

While I stood watching I saw a man coming along, and he turned almost the whole way round, so as to bring the picture of a dog in front, where it could be most plainly seen. It was a bull-dog—one of the sort that shows its teeth, very ugly and savage-looking. I could not understand why he should take so much trouble to turn out that ugly picture (for he had prettier ones that I could see) until I saw another man coming toward him who turned out a picture uglier still. It was of a wolf.

As soon as they came close up to each other the pictures seemed to be alive. I was astonished to see their eyes move and their mouths open and

shut, seeming to snap at one another, and all I could hear were barking and growlings until they had gone, the fierce beasts, trying to bite each other as far as I could see them.

Next came a little girl. Happening to look behind her, she saw another little girl following her. At once she turned around one of her sides, that had the picture of a wasp on it; but the little girl who was coming after her turned the picture of a beautiful butterfly. As soon as they met, the wasp began to buzz and dart out its sharp sting, and I saw the butterfly fluttering and fluttering, till presently it was scared away, and the picture of a great spider came in its place. Then the spider seemed to dart at the wasp, and the wasp tried to sting the spider; and the little girls went off quarreling as fiercely as the two men had done.

Next I saw a young woman. She was prettier than any other of the Lantern People that I had seen. I saw her coming from a long way down the street, and she never turned her sides, no matter whom she met, but always kept one picture in front; and that was of a dove. It had a ring of black around its neck, and an olive-leaf in its beak. I thought to myself, "What a beautiful picture!" Just then another young woman came up and pushed rudely against her, and I saw this rude one turn out the picture of a snake. And the snake hissed and darted out its forked tongue, but the dove would not go. All it did was to coo softly and flutter its wings and hold out the olive-leaf.

When the snake found that it could not frighten the dove away, it began to creep off itself, as if ashamed; and what was my surprise to see presently another dove come in its place! And the doves began to coo to each other, and to look pleased and happy, and the two young women took hold of each other's hands; then they put their arms around one another's necks and kissed each other, and so walked happily away. And I awoke. This was the end of my dream.

My young friends, do you know what it means? It means that we may be gentle and kind to each other, or we may be cross and ill-natured, as we choose. The dogs, the wasps, and the snakes, mean ill-temper; the butterflies and the doves mean gentleness and kindness. When we do not like a person, we are very apt to turn toward him our ugly side; that is, the picture of the dog—or the snake, or the wasp. And if we do this, it is most likely he will turn his ugly side toward us. Then we quarrel and hate each other; and it is no wonder. How much better always to keep turned toward others the picture of the dove! Should we do this, it would be seldom indeed that the dove would not, sooner or later, be turned toward us.

Do you want to know who wrote it? I suppose it was our good friend Charles Foster, the author of the "Story of the Bible," and the little tract seems to be an advertisement of this book, which so many of you have read. Now then: Is it right that we should go through the world loving so few of our neighbors, and disliking so many? Jesus said, you know, "Love ye your enemies." Sometimes I think I do love even my enemies; that is, I think my greatest desire is to do them good, and that I rejoice at an opportunity of doing them a kindness; but, oh dear me! how quick I slip back and forget! Yes, I forget my Master and Savior who died for his enemies, because he loved them. Help me, O my Savior! Help me in this task that seems at times an almost hopeless one, of trying to turn nothing but a pleasant picture and pleasant exterior and a peaceful face to all my neighbors, no matter under what circumstances I find them or where they find me.

Even now as I breathe this prayer, light seems breaking over me. What a sad, sad world this would be, had the Savior never come to it! How many, many times, when troubles and trials come all around me, have I sought that refuge—"Come unto me, all ye that are weary and heavy laden." How

much is this promise worth to us! Over and over again I think of it. All that the world can furnish, all that this vast universe can give in the way of happiness, sinks into insignificance when compared with that great boon, Christ's love and his help. "I am the way, the truth, and the life."

RAISING STRAWBERRIES.

MRS. MAHALA B. CHADDOCK TELLS US HER EXPERIENCE.

IT is real interesting to watch the Editor of GLEANINGS when he gets to doing anything; he is so excited about it, and so sure that that is just the thing. I have been through one attack of the strawberry fever, and I know all about it. I had an idea once that a fortune could be made in strawberries. It is the easiest thing in the world to count up. If I sell \$100 worth of strawberries from half an acre of ground, I could sell \$200 worth from one acre; and on 80 acres I could raise \$16,000 worth, and in a few years—a very few—I should be rich. Well, the very next year I did not sell \$20.00 worth. It was a dry year, and the berries all dried up, and it ran on until we did two years with no berries for the table.

Last August, a year ago, I made up my mind to have some strawberries once more. I couldn't get any ground plowed, much less manured, subsoiled, underdrained, etc., but we had a patch of sweet corn that was to be fed to the cows, and Mr. Chaddock said I might set the plants there if I wanted to; but that as for him, he had no time to "bother" with strawberries. I engaged the plants in Vermont, five miles away, and was to go for them when the first rain fell. One night it rained all night, and the next day I went for them; but the man said it was too wet to go among the plants; that I must come again when it was not muddy. In a week I went again. This was on Saturday afternoon; and when we got home with the plants it was 6 o'clock. We must eat supper, milk the cows, and set out those 400 plants. Mr. Chaddock could not help any, because he was school director, and had to go to a meeting of the board that evening. We dug little holes with case-knives, poured half a pint of water in each hole, and set in the plants, putting them in a crooked row between the rows of corn. Jessie and Mamie Marshall (a visitor) gouged the holes; Harry carried the plants, and dropped one at each hole (sometimes two), and Minnie and I set them (Irving had to go after the cows and do the milking). Presently it grew dark, and the children grew tired and sleepy, and I sent them all to the house, and I took the lantern and finished setting the plants alone. I am a brave woman; I care nothing for robbers nor tramps: I can not imagine what the feeling is, that makes one afraid of the dark; but I was a sick woman; and when my back gave out I crawled on my hands and knees from one end of the row to the other, till the last plant was set; then I crawled to the house, and went to bed, and that night it rained, and every plant grew. Now, it seems to me that my way of setting strawberry-plants is a great deal more real than for Mr. Root to stand by a gardener and direct him to put one plant in each pot, and talk of the beauty of raising strawberries.

MAHALA B. CHADDOCK.

Vermont, Ill., April, 1885.

My friend, I know just exactly how you felt when you crawled on your hands and knees, and got the last of that big lot of plants set out, and whether the rest felt like helping any more or not. I think I know, too, how you felt when it rained and they all grew. Energy is a grand thing, especially just the kind of energy you speak of. But I think it is grander still when it is harnessed and made to work evenly, consistently, and methodically. Commence a whole year ahead, if necessary, in preparing your ground for strawberries. Underdrain it at one time, subsoil it and plow it as you know it ought to be at another time. Raise some plants yourself; and if you have them in pots, you won't need to mind very much whether it rains or not. We were setting plants out but yesterday, and the ground was so soft and nice that we did not have to gouge out holes with case-knives, and pour water into them. We stretched a stout cord the whole length of the field, clear from the carp-pond up almost to the house. Then we made the horse follow that cord, and plow and furrow in the soft dirt. The ground had been manured and harrowed and rolled and dragged, and worked up until it was so soft that almost any child might envy the job of moving the fine rich mold with his fingers. Mr. Weed says if you give him ground like that, and every thing fixed just right, he thinks he could set out 10,000 plants in a day. I know his back would ache almost as bad as yours, though. Mrs. C., by the time he had got half of the 10,000 planted; but I should feel a good deal more respect for the boy who got the back-ache that way (or girl either for that matter), than if they got the backache in a five-mile contest at the skating-rink.

A BEE-KEEPER IN TROUBLE.

ONE OF THE JUVENILES TELLS US ABOUT IT.

HERE is papa's report for last year. He says it will do to go in Blasted Hopes, if any will. Out of 80 stands of bees he never received one pound of honey, and to-day finds us with only 8 stands living. Bad luck seems to be his lot in every thing. He has not been out of the room for twelve days; he got his arm and hand caught in a belt in the elevator where he was at work, and tore it nearly all to pieces. It is his right arm, and he can't write to you. He says you will have to stop GLEANINGS, for he feels too poor to take it any longer. It frets him because he can't go to Sunday-school, but he still puts his trust in the Lord, and hopes for a better day to come. Please write to him. FRED PARSHALL.

Skidmore, Mo., April 20, 1885.

Why, Freddie, things do look dark at your house indeed, do they not? I am afraid your papa let his bees starve, did he not, or did they get aphid honey? I did not know there was much trouble in wintering so far south as you are. You say you did not get one pound of honey from 80 colonies. I believe that is one of the worst reports I ever knew. I should not have neglected to prepare them all for winter, though, even if I did not get a pound. Your locality has, in

former years, given very good results, and it will yet—never fear. Go to work, Freddie, and make the most you possibly can of those eight remaining colonies. It will not be a very difficult matter to fill the 80 hives again, in your warm climate.—Now in regard to that accident. It is true, accidents of this nature will sometimes happen, but I am afraid your pa must have taken risks. We trust the damage will not be so bad after his arm is thoroughly healed up.—No, Freddie, we are not going to stop GLEANINGS. With your papa's permission we will keep it going right along, and may be some of the brethren may feel disposed to help you fill your 80 hives, in the way of donating a queen or two, when they can spare them. The brightest part of your little letter is the winding up, where you say your father is still going to put his trust in the Lord. Tell him to remember the words, "Whom he loveth he chasteneth." Now, when things get better, Freddie, please write us another letter, will you not? There is another pleasant thought, Freddie: Even if it should please God to permit your father to be kept away from Sunday-school, the school he was instrumental in starting will still go on, and will be a blessing, who knows how long?

ANOTHER LETTER FROM JAPAN.

HOW THE JAPANESE OBSERVE NEW YEAR.

MR. ROOT:—Please excuse me for not acknowledging the book you sent me, sooner. I was quite sick at the time it arrived, and was unwell for over a month. Then Christmas time drawing near, it made me very busy.

I should like to tell you about our Japanese Christmas service, but this year we postponed it till some time this month, and so it is impossible. The Japanese make a great ado about the new year, so I will tell you about that.

Every house is cleaned so as to look bright on New Year's day. They are decorated with a lobster, which signifies "many happy returns of the day till your body bends like a lobster" (I suppose you have noticed that boiled lobsters double up). On either side of the entrance is placed a pine-tree, and two or more pieces of bamboo. Sometimes the trees are joined by a rope, to which is fastened a number of pieces of paper, which are supposed to drive away evil spirits. The above festivities for the new year seem more like men's work, but you must not think the women are idle; they have to make their own and their families' clothing, for they must (?) all be new, since every Japanese wants to have some new article of clothing.

Just before the new year, all of the shops containing kites, toys, hair-pins, and battledores, are renewed, and they sell these very cheap then; but on New Year's day the prices rise enormously. Many of the cake-shops bake large round cakes made of "mochi," or mashed rice. They are set upon a little table in the houses during the festivities, after which they are thrown away. Many cook their meals for the first three days of January beforehand, so as to have a good rest at the beginning of the year.

If you would go out on New Year's day in Japan

you would find yourself in the midst of happy faces and bright dresses. You could not go far without seeing a group of young men and women playing battledoor and shuttlecock. They always have a box of Japanese black ink, with which they paint the faces of those that miss. You would also see young men, and even old men, flying kites beside the little boys. Every one is out in his good clothing. Flags and decorations are on every side. There are many happy faces, and the little babies beside the other children usually have a piece of candy or a toy in their hand.

I must not forget to mention the Japanese custom of making New-Year's calls. They try to visit all of their friends by the 3d of January; but if that is impossible, by the 5th. Japanese call it an almost unpardonable rudeness if all of their friends have not been to their house by the 7th.

Tokio, Japan, Jan. 2, 1885.

ADA KRECKER.

HOW TO RAISE CRANBERRIES.

WRITTEN BY ONE OF OUR 15-YEAR-OLD JUVENILES.

UNCLE AMOS:—As you say you are going into the cranberry business, and want some advice how to prepare and set out a bed, I will tell you what I know about it, for my pa (L. C. Seaton) planted a bed in Minnesota, and I helped him, so I have some knowledge how it should be done.

The most important part is the selection of a site. A peat-bog, or a mucky slough, that is so situated that it can be drained or flooded at will, is a proper place.

Alluvial formation is the only one in which the cranberry can be successfully cultivated; but you want to avoid gravel, clay, and loam, as detrimental to its growth.

This end of bed is lowest, so the water will flow through the ditches.

Outlet

Foot gate— — —

4 ft.

Dam

4 ft.

8 ft.

Dam

Drain

This 8 feet wide

4 ft.

This space 4 feet wide.
Inside of dam.

— — — Head gate

Dam

Inlet
Drain

DIAGRAM OF CRANBERRY-BED.

This bed can be any size desired, but the drains in dry land must be only about 8 feet apart; but if the land is pretty damp they can be further apart, even 10 to 16 feet. It is best to fill in the inside of dam with sand; it will hold water better, also prevent weeds from growing on inside of dam.

If you have a peat-bog, you want to take a sharp

spade or grub-hoe and cut off the bogs or uneven places, and make it just as level as a floor. If your bog has a sufficient depth of muck to support the vines, say 16 inches deep, then the pieces cut off to level down the bed can be placed around it to help form the dam (for you will need a dam 2 feet high all around your bed to hold the water to flood your vines during winter).

Now cut a ditch about 8 inches deep and 8 inches wide on the top, and 4 inches wide on the bottom, running zigzag the whole length of your bed, as shown in the diagram.

The object of this ditch is to drain and water your beds. If your beds are made in a springy place it will drain it; but if in a dry place you can water it through these ditches. By keeping the water constantly flowing through them at a depth of 3 inches it will soak through the beds and give your cranberries the proper amount of moisture.

Now, this bed wants to be covered 3 or 4 inches deep with pure clean sand, free from foul seed; this will keep down grass, weeds, etc., and is just what the cranberries require to give them a healthy growth. If you have no peat-bog, but a slough covered with water, then drain it, level off as before, cover with sand, and you will have an everlasting bed that will grow better the longer it stands. If you have neither requisite, then you must dig a trench 12 to 16 inches deep, the size you wish your bed, and fill with muck or peat, and cover with sand as before.

When one has plenty of water at hand, a pretty good cranberry bed can be made on a bed of clear sand, but the trench through the beds must be closer together, and water kept constantly running, and thoroughly flooded from one to two feet deep through winter.

If cranberry-vines are planted in too rich soil they will all grow to vines, and not bear well; hence the necessity of sanding and flooding. The Cape Cod is the best variety to plant for general use. The vines can be planted at any time during spring, when the beds are prepared, by cutting the vines into pieces about 4 inches long, and planting in the sand, leaving the ends sticking out an inch or so. The closer together they are planted, the sooner they will mat the ground, which they must do before they become good bearers.

Some have run their vines through a straw-cutter, and sowed them like oats, and dragged them in, and had good success with them; but in a small bed the best way is to take a garden-trowel or small hoe, and strike it into the ground at an angle of 45 degrees; lift the sand up, drop 2 or 3 vines in the hill, replace the sand, press down with the foot, and the work is done.

I have already written more than I intended, yet I have said nothing about the proper time for flooding and draining off water in spring, etc.

J. D. SEATON, age 15.

Ellensburg, Kittitas Co., Wash. Ter'y.

Many thanks, my young friend. Your account is given excellently; and even though we should not go into the business, it is worth something to know how such things are done. By the way, it seems to me that that system of irrigation would produce splendid results with many other kinds of vegetation. I should think that it would be quite troublesome having so many open ditches, especially if one were going to use a

horse in working in the ground. Why would not a good-sized tile answer the same purpose? Water flows on our low land through the tile almost all the time, more or less. Last fall I visited a celery farm where they put tile just the depth they wished the water to come, and it did the business beautifully. We shall be glad to know something more about the flooding, my young friend. And we should also like to know how your father made it pay. Is he raising cranberries yet?



Every boy or girl, under 15 years of age, who writes a letter for this department, CONTAINING SOME VALUABLE FACT, NOT GENERALLY KNOWN, ON BEES OR OTHER MATTERS, will receive one of David Cook's excellent five-cent Sunday-school books. Many of these books contain the same matter that you find in Sunday-school books costing from \$1.00 to \$1.50. If you have had one or more books, give us the names that we may not send the same twice. We have now in stock six different books, as follows: viz.: *Sleeper Off*, *The Giant-Killer*, *The Roby Family*, *Rescued from Egypt*, and *Ten Nights in a Bar-Room*. We have also our *Homes*, Part I and our *Homes*, Part II. Besides the above books, you may have a photograph of our old house apiary, taken a great many years ago. In it is a picture of myself, Blue Eyes, and Caddy, and a glimpse of Ernest. We have also some pretty little colored pictures of birds, fruits, flowers, etc., suitable for framing. You can have your choice of any one of the above pictures or books for every letter that gives us some valuable piece of information.

"A chief's among yee takin' notes.
An' faith, he'll print it."

WELL, my little friends, if you were to come to see me this beautiful May day, what do you think I would have to show you? I guess it would be the new poultry yard and house. I made the yard of two rolls of poultry-netting, and put the house in the middle. Then I had it separated so I could have Plymouth Rocks in one end and Light Brahmas in the other. The Light Brahmas I like the best, as they are so gentle, and nice looking too; and then they give us such beautiful big brown eggs every day. Huber and I gather the eggs; and when they are nice and clean we have a real good time admiring each one of the eggs. The Brahma rooster is almost as tall as Huber, and Huber can put his arm around the rooster's neck, without scaring him much either. A few days ago, when the men were at work on the house they let the two roosters get together, and, oh my! how they made the feathers fly, and blood too, some. I went and put my arms around the Brahma, and led him back home, and then I began talking to him about the folly of fighting when there was not any thing to fight about at all. What do you think he did? Why, he turned around and bristled up, and was going to fight me. I laughed so hard that it probably reminded him what

he was about, and he went off looking kind o' sheepish. I think I shall have to put that little verse up somewhere along the division fence—that one that commences,—

"Let dogs delight to bark and bite."

You know the rest of it. I can not tell you to-day how the house is fixed, but may be I will have our engraver give you a picture of it. It has two porches—one on the east and one on the west side. The fowls spend most of their time in the porches.

FREDDIE'S 100 CHICKENS AND 60 EGGS A DAY, ETC.
Our bees wintered very well. We had 26 hives, and lost only one. In one hive the queen was not good, and we killed her. We are getting 60 eggs a day. We have 9 geese and 100 chickens.

FRED W. ISRAEL.

Damascus, Col. Co., O., May 4, 1885.

A LETTER FROM A MOTHERLESS LITTLE GIRL.

My mother died last October. I have one brother and one sister. Pa had 43 swarms of bees in the fall; 4 swarms died this winter. I have one swarm. When our bees get to robbing, pa exchanges hives and they go in their own. Pa sent to the U. S. Fish Commissioner for some German carp.

Constantine, Mich. EDNA RIFENBERGH, age 11.

A SWARM OF BOYS, ETC.

My papa keeps bees. He delights very much in them. We all like your ABC book and GLEANINGS. I like honey better than stings. I do not get about the bees much. Mamma needs me in the house most of the time. I have no sister, but five brothers, all younger than myself. Papa says if a man wants to be successful in bee-keeping he also needs a swarm of boys about him.

Davidsburg, Pa. CEVILLA K. EMIG, age 11.

A LETTER FROM A WEE SCOTCH LASSIE.

I am a wee Scotch lassie called Mina; went to school last harvest with sister Gina, and I am going often. Father is a great bee-keeper, and won the prize for the Highland essay. He takes his bees to the Lead Hills every year for heather honey. He is not well, and I help him all I can. When I was 3 I asked him if the wee bees and wee een to see in the dark—not the dark of the skep, but the dark when I am sleeping. A bee-freen calls me Wee Bee ever since; isn't that funny? It will be far to send me a book for this. WILLHEMINA SMITH THOMSON.

Auchinraith, Scotland.

ERNEST'S PAPA WITH HIS FOUR APIARIES.

My pa has four yards of bees; 52 colonies in one place, 40 in another, 30 in another, and 45 in another; they are in cellars, except 55, which are buried under the snow. It has been 48 degrees below zero here this winter, but the bees are doing well. Part of the bees, pa is working on shares. He has 100 sheep. It is fun to see the little lambs skip and play. Ma has 49 Plymouth Rocks that laid 248 eggs in the month of February. ERNEST A. GILL.

Viola, Wis., March 14, 1885.

Thank you, Ernest, for your report. We know your pa, and have known for some time that he was a big bee-keeper. Two hundred and forty-eight eggs in the month of February would be not quite nine eggs a day; but I should say that was tiptop for forty hens in February, away up in Wisconsin.

Grandpa had 53 swarms of bees in the fall, and now he has only 26. My papa is a Methodist preacher.

MABEL POTTER, age 7.

Worcester, Wis., April 24, 1885.

FROM ONE OF OUR FLORIDA JUVENILES.

My papa has a few hives of bees. We have 19 little chickens. We have a dog and 8 pigs. They are growing fast. We have 9 pigs, with the old one. I have a cat.

LETITIA LUTCH.

Hawks' Park, Fla., April 6, 1885.

CHARLEY'S REPORT.

Papa has had bad luck with his bees this winter, for it has been very cold here. We had a large snow here yesterday, but it is nearly all gone now. It was so cold that papa thinks that some of his bees are frozen to death. He has one hive that has lost its queen, and is nearly dead. If it dies, that will bring his number down to 69.

Windsor, N. C., March 23. CHAS. HARDEN.

SAVED 103 OUT OF 115.

We have had a bad winter. It was awful cold, but papa's bees wintered well; lost only two out of 105. The weather was warm last week; the blue-birds and robins were singing their merry songs, and the bees filled the air with their busy hum, which made us feel as if spring were here; but it has turned cold again.

CHARLIE NEBEL, age 11.

High Hill, Mo., Mar. 9, 1885.

HOW ELMOR DEFENDED HIS SISTER.

We have one swarm of bees. One day my sister and myself were watching the bees work, when one stung my sister. She had never been stung before, and it made her jump. She started to run, and ran right toward me. I tried to get out of the way, but she kept coming to me. But I got away and she went into the house.

ELMOR WILSON.

Allerton, Iowa, Mar. 6, 1885.

HONEY FROM THE PERSIMMON.

My papa has 9 hives of bees. Last year he got 250 lbs. of comb honey from six hives. The honey from the persimmon-blossom was the best of all. The bees make more honey from the persimmon than from any other source. The bees work on it from morning till night. We use the Langstroth hive with pound sections. I love to help take honey. I am not afraid of the bees.

LINDEN K. SHEPHERD, age 9.

Kent's Store, Fluvanna Co., Va., Feb. 26, 1885.

TWO QUEENS IN A HIVE.

We have six colonies. Mamma sold two for hives. I have two colonies of bees. One has got four queen-cells. I went to look at my other one, and a bee stung me just below my eye, and it hurt so badly that I could not see. I do not get stung often; but when they do sting me it hurts; you ought to have seen my face. Have you ever heard of two queens living together? We had such a case last fall. They kept building queen-cells, and we divided them twice, and after that we looked in and found a young queen, and we let her stay; and this spring, when we looked in, the old one was gone.

LIZZIE WITTE.

McGregor, McLennan Co., Texas, Apr. 22, 1885.

Yes, Lizzie, it is quite common to find two queens in a hive, under the circumstances you mention—an old one and a young one, mother and daughter. The A B C book will tell you all about it.

ONE LEFT OUT OF THREE.

My papa has one stand of bees; he had three last fall, but two died. We have not had any honey from them yet. Papa never wears his veil when he is hunting for the queen; he is not afraid of them.

LENA W. BRIGGS, age 11.

Eddyville, Mass., Feb. 6, 1885.

A SHORT LETTER ABOUT MISTAKES.

It is a mistake to put off feeding until the nights become cold. Better be too early than too late. It is a mistake to use up all the pots, kettles, pans, spoons, stove-hooks, and other things upon which to play the dead-march, when a swarm has started on an excursion to the groves.

B. B. GILLET.

Allerton, Wayne Co., Ia., April 9, 1885.

FROM 4 TO 7, AND 500 LBS. OF HONEY.

My pa has 15 colonies of bees. He looked at them the other day, and found two of them dead. He had 7 swarms of bees from four colonies. We got 500 lbs. of box honey. We winter them on their summer stands. We pack them in chaff hives.

JOHNNY CARTRIGHT.

Weltonville, N. Y., April 12, 1885.

MARKING HIVES.

I am a little orphan-girl, and live with my married brother. We all love to read GLEANINGS, and work with the bees. You say in A B C, when the hives are close together there should be some mark on their homes so they would not get lost. To help the little bees, my brother has their hives all in a row, and nicely painted, one blue and the next one white, so on all through. I love their blue-eyed baby-boy. He calls his little wagon "hut O."

LILLIE CURRENS, age 12.

Goodland, Ind., March 12, 1885.

TAKING THE BEES OUT OF THE CELLAR.

It is pretty warm here to-day, but there is a lot of snow. We carried out 8 swarms; they had a good fly but it is rather cold yet. My pa was looking at a strong swarm, and he found a young Italian drone. Is it not early for them in this cold country? In looking over the bees in the clamp, pa found one dead with dysentery since my last; that leaves us 3 dead out of 30, up to date. There are small parts of the fall wheat bare, and it looks very well. When I received the big envelope to-day I opened it, expecting to get a price list; but, lo and behold! to my surprise I found the beautiful book, Pilgrim's Progress. I do not know how to express my thanks.

Shelburne, Can.

CHARLES E. THOMPSON.

LITTLE ZOO'S LETTER.

I is rich now. Tozzer boy say, "How is oo rich?" I has the doodest light when the sun dets up, de puttliest dreen grass and fowers, and the dew-drops shine on 'em like the diamonds in your ma's rings; den after while the nice berries come on 'em; we tan eat 'em or dry 'em, tin have 'em on the table and in our pay-house. We fins dem up and down the nice roads along dem pretty fences and the banks of the creek, and blances; den the pretty birds sing for us while we gather them, and we gets dood tool water to drink. When the pretty light goes out over the hills, the pretty stars peep out and shine right on me, an I spec my eyes shine right at 'em too. Tozzer boy says 'em aint mine, but ma says da is; that the dood man gims 'em to me, and all of us. So I feels rich with all these dood and pretty things, des waitin' for me to tall 'em mine.

Zoo.

FROM A YOUNG BOATMAN.

My pa keeps bees. He had 50 stands in the fall; but the winter has been so cold that I do not know how many we have now. We did not get very much honey last fall. We take GLEANINGS. I learn a great deal by reading it. We live on the Des Moines River. My pa is ferryman. I am a little boy, but I can row a boat. Come over and I will give you a boat-ride.

ELDIE WALKER.

Rousseau, Iowa, Feb. 7, 1885.

SUSIE'S LETTER.

Pa commenced with 16 stands of bees last spring, and increased to 60, and extracted 1400 lbs. of honey, and I turned the extractor. All of the bees died but 41 stands, and they came out all right this spring, and those that died had plenty of honey in the hives. I should like to know the cause of it. Last summer I had to let pa know when they swarmed. We hope to have a good honey crop this year.

SUSIE GARRISON, age 11.

Whitehall, Ill., April 25, 1885.

THE FIRST SWARM OF BEES FOR 1885.

A swarm of bees alighted on a fence at one of our neighbor's, and they found them and put them in a hive that had comb and honey in it, and he says they are doing well. It was on the first day of April. They must have come from the woods. There was about a quart of them, and they had a queen. My papa has six swarms of bees in chaff hives; he lost none this winter; my grandpa lost a good many of his bees, and so have our neighbors.

Dayton, Ohio, April 15, 1885. VIOLA TURNER.

AN ORPHAN BOY'S LETTER.

I am a little boy of 13. I work in the field every day. We have a great many hives of bees, and get a great deal of honey. We sell it by the gallon. We eat a great deal of it on the table. It is very good in cold weather. I have a large truck wagon, and I work yearlings to it. I am an orphan boy, but I have a good guardian. I have been with him six years. I have a little single-barrel shot-gun. It throws shot 100 yards. I can kill a bird flying, or any way.

T. S. TRAVILLIAN.

Caseyville, Miss., Apr. 8, 1885.

FIVE CENTS A SWARM.

My papa keeps bees. I watch them, and when I see them swarm I get 5 cts. One day last summer a swarm came out, and we just got them hived when a wind storm came up. It blew the hive over, and we lost a good many bees, and lost the queen. A neighbor was helping papa hive the bees, and the bees alighted all over him, and stung him so badly that he did not sleep any that night, and he said he would rather eat the honey than to hive the bees. I am a left-handed girl.

ANNIE BENNETT.

Alexandria, Minn., March, 1885.

HOW MINNA LOST THE BEES BECAUSE SHE FORGOT AND LEFT THE COVER OF THE HIVE OFF.

I had a swarm of bees, and moved them 13 miles, and they did well for about a week. They commenced coming out, and I went out to look at them and left the top of the hive off, and next morning they were all dead. I was very sorry, for I loved to tend them. Grandma and myself went on shares, and she had 36 swarms and lost all but 4, and I lost mine too, but I am going to get me another one.

MINNA DICKENS, age 14.

Mossing Ford, Va., April 19, 1885.

ABOUT STRAWBERRIES.

I don't like honey, but I like strawberries. Papa has a nice bed of Parry, Sharpless, and Crescent Seedling strawberries. He thinks the best way to raise them is to set out a new bed every spring, and dig or plow up the old ones as soon as they are done bearing.

HARRY I. DOW, age 6.

Corning, Steuben Co., N. Y.

THE DEAD QUEENS.

We have six hives of bees. One colony carried out a great many dead bees and three dead queens one day last month, and laid them on the alighting-board, and they have one live queen and a great many bees yet. Father picked up the dead queens and put them in a glass tumbler. He says the young queen stung her mother and sisters, and killed them. One other colony carried out their queens, and father bought a queen and gave them.

NONA JOHNSTON, age 8.

Brock, Neb., April 7, 1885.

HOW JOSEPH'S FATHER GOT A START IN BEE-KEEPING.

My father takes GLEANINGS, and thinks it is very interesting. He has 15 colonies of bees, but they did not make much honey last year. You can not guess how pa got some of his bees. He was out hunting two years ago last January, and he found them in the top of a big tree, hanging under a limb, and he shot them off with his rifle, and then piled up the comb and went home and got a bucket, and brought them home and put them in a hive.

JOSEPH H. THARP, age 10.

Harmony, Fredell Co., N. C., March, 1885.

ANOTHER LETTER FROM DAISY WHITE.

My pa keeps bees; he has 162 swarms at home, and 45 swarms away from home. It has been so cold for four weeks that pa doesn't know whether any swarms have died or not. We have got an acre of strawberries. I suppose we shall be very busy next summer, picking them. I have a baby-brother, and he can sing ever so many tunes. He is not two years old yet. He enjoys riding on the little sled as well as Huber. He likes to see us skate. I should like to go out to Medina again. I had such a nice time when I was there. I enjoy reading the letters in GLEANINGS.

New London, O.

DAISY WHITE.

CHARLEY'S POETRY, ETC.

Bad luck with my bees this week. I had only two hives; one of them was in the woods. Father went to it yesterday, and the nemic had killed the bees and eaten the honey, so that leaves me only one hive, but I hope they will swarm this spring.

THE BEES.

Up they are, bright and early,
For they love the sun-land dearly
You see them flying all the day
Hard at work and never at play
Often, after dark has come,
You see them flying for their home,
When at their hives they buzz their wings
They never tire, poor little things!
But, oh the little things
In battle use their fearful stings,
But, hush! then you certainly must
Or not one of them can you trust
But when the cold winter comes,
And shuts them in their homes,
By cold they'll all be slain,
If they come out too soon again.

CHARLES T. HARDEN, JR.

Windsor, N. C., April 6, 1885.

LETTER FROM A CALIFORNIA JUVENILE.

Our bees swarmed and alighted on the fancy woodwork of our cupola, or tower; my brother is

the bee-keeper, and he was not at home. My father and a gentleman living with us got through a trap-door in the roof and bived them, and left them there until brother came home; then they brought them down. April 7, papa told us to come out to the corral before we had even had breakfast. We were very much pleased to see a nice little brown foal standing by our mare's side. Our papa lets her out on the grass every morning, and we go with him and run with our little foal, and we have much fun with her. LILLIAN T. HINDE, age 13.
Anaheim, Cal., Apr. 9, 1885.

ALTA'S LETTER JUST AS SHE WROTE IT.

DEAR MR ROOT. MY MA FOND A SWARM OF BEES ON AN OAK TREE. SHE PUT THEM IN THE SELLER. BUT THEY ALL DIED SHE WANTS TO GET SOME MORE. IF THIS IS WORTH A BOOK SEND THE JILLY KILLER. I AM 8 YEARS OLD.
Hatches Mills, Ind. ALTA M. COSTELLO.

WANTS A BOOK, EVEN IF SHE IS LITTLE.

If I am little and can't write, I want a book, so I get Jimmie to write for me. Jimmie goes to school all the time. I get awful lonesome.

BERTHA E. HOWE.

HOW JIMMIE'S FATHER FEEDS BEES.

As pa keeps bees and takes GLEANINGS, I thought I would write and tell you how he feeds his bees. He has a Simplicity feeder, which he sets on top or near the cluster; then with a box with a hole in the top he covers it up. The hole is covered with wire cloth; he places a tin tube through the chaff, so he can pour the syrup in the feeder. Pa got his first bees in the woods in a tree. That was in the spring of 1882; that summer he found another tree, but they had no queen, so he sent and got a queen of you, then bought one stand, so he had 3 stands to commence with in 1883. They increased to 15, and last summer they increased to 23; but pa doubled them up to 16, and now he has but seven stands left, as the chaff did not keep them from freezing. This is the first letter I ever wrote. I have one little blue-eyed sister, 4 years old. Her name is Bertha. JIMMIE R. HOWE, age 8.

Sulphur Hill, Ind., March 5, 1885.

ORANGE-BLOSSOMS FROM AWAY DOWN IN FLORIDA.

I received the book that you sent to me, and I like it very much indeed, especially the little book with little Bopeep in. We have a school now. I like the teacher very much indeed, and I like to go to school, and I hope that it will keep more than three months. Sometimes I whisper, and she keeps me in at recess; but I don't care for that, because I can have some fun. Every Friday we speak pieces. I like to speak. Tell me the name of your little girl. I have read some letters in GLEANINGS, and I found the name of Blue Eyes. I thought that I would send you some orange-blossoms. EVA GLAWSON.

New Smyrna, Fla., March 8, 1885.

Thank you, Eva, for the orange-blossoms. I am glad to know that you like to speak pieces at school. I am glad that your teacher is trying to have you stop whispering. Our little girl's name is Carrie, but we call her Caddie for short. She brings me some of her figure-work which she does at school, every few days; and, by the way, she is getting so she writes very well. I think we shall have to have one of her letters in GLEANINGS.

WHY KITTIE'S PAPA LOST NEARLY ONE-THIRD OF HIS BEES.

I got a pair of ear-rings for a present, and a nice chromo. Pa took his bees out two days ago. He lost nearly one-third. He set them in rows, packed with chaff. He was very busy last fall building a house and cistern, and neglected them. He made a brick filter in the cistern, something like that one in GLEANINGS. I should like to see little Huber. I wish you could see our blue-eyed baby. Her name is Pearle.

KITTIE M. BAIGAR.

Border Plains, Iowa, March 28, 1885.

JOHN'S REPORT.

From three colonies last spring we have taken 110 lbs. of extracted and 50 lbs. of comb honey, making in all 160 lbs., mostly from Spanish needle. Basswood yielded nothing, and white clover yielded only a small amount of honey. We increased them to 5. They are all in good condition. I packed 4 on their summer stands, and put one in the cellar. I carried it out of the cellar on the 5th ult., to give them a cleansing flight. As the bees are gathering pollen now, I think I have wintered well. Most of the farmers around here have lost a good many of their bees. The coldest weather here this winter was 26 degrees below zero. Pa is moving about 50 stands of his bees to a place called Bear Creek, five miles south of here. He has taken 30 down, and will take the rest in a week or two. JOHN V. NEBEL.

High Hill, Mo., April 1, 1885.

WHAT IS HONEY-DEW?

We received the hives all right, I am glad to say. I am a boy 14 years old, and live on a farm near Princeton. My papa keeps bees, but is traveling for the Trenton Iron Co. I put all of papa's hives together. We had 10 hives last fall, and have 8 out of 10 now. My mamma and I will have to take care of the bees this summer. Will you please tell me what honey-dew is? IRVING D. BANKS.

Princeton, N. J., April 20, 1885.

Friend Irving, it is a hard thing to answer; but I suppose the most of it is an exudation from certain insects that feed on the bark and foliage of different trees. At other times, the plants themselves seem to exude a sort of honey, or saccharine substance. For the last few days our bees have been very busy on the heads of lettuce in our cold frames. I suppose they find something that is sweet, of course, for they search every leaf carefully, and dive away down into the heads. They are on hand every morning, just as soon as the sun is up enough so they can fly.

MUSKRATS EATING THROUGH CARP-PONDS.

The animal that made the hole in your dam was probably a muskrat. They are sometimes very troublesome. My neighbor had a good dam spoiled, and all the water let out by them. He has rebuilt the dam, and stocked the pond with carp. He now keeps the rats away by watching for them, and shooting them whenever he sees any of their work. A good way is to trap them with a steel trap set under the water in their runs. J. H. TINKER.

Olathe, Kansas.

Yes, friend T., I know it was a muskrat, for one day when I was down by the creek I saw him walk along leisurely, sometimes under water and sometimes out. Once in a

while, when he found a water-plant to suit him he pulled it up and then sat down in the water to nibble it while he held the root in his paws. He looked as cute as could be, and I felt bad to mar his enjoyment. But I concluded it must be done, so I hunted up a nice smooth stone, and drew back, thinking I could pop him right square on the head, sure; but just then my foot hit a brush and made a noise. He stopped his lunch, looked at me just about a second rather curiously, and then went keeling head over heels down into the water, and finally crawled up under the turf right opposite the carp-pond. You see, he digs back in the bank there and comes out right inside of the pond, and away goes the water. He has not done it very lately, however, for we have pounded in so many tin scraps that he will spoil his teeth if he gets through again.

A PIECE ABOUT BEES—TAKEN FROM THE THIRD READER.

I will write you a piece about bees. I got it out of my Third Reader. When bees enter a new hive it is said that they divide themselves into four companies, one of which goes out to the fields in search of materials; another employs itself in laying the bottom and wall of the cells; a third in making the inside smooth from the corners, and the fourth in bringing food for the rest; but they are not always doing the same thing. They often exchange their tasks—those that have been in the fields coming in to work, and those that have been confined to the hive take their flight. They have a language, or signs, by which they understand each other. When one that is hungry meets a loaded bee, they stop, and the one that has honey bends down its trunk and lets the contents fall into the mouth of the other. Their diligence and labor are so great that in one day's time they are able to make cells in sufficient number to contain 3000 bees. Some of the bees are busy all the time in stopping the holes and openings, for it is necessary that they should be warm. Their cells they strengthen all round by bands or strings of wax, and when this is done they go over them all again with their teeth and pare away all that is unnecessary, and shape round the partitions, taking away all the chips or fragments of wax, and carrying them out of the hive. They are very neat, and keep their house perfectly clean.

ANNIE LEUCK, age 13.

Campo Seco, Cal., March, 1885.

Friend Annie, your story is in the main pretty accurate, although I think it is a mistake about bees dividing themselves into four companies, although it is true that they apportion the work among them, some working at one thing and some at another; but they exchange places so much that it is pretty hard to lay down any rules in regard to their division of labor.

HOW HARRY GOT INTO TROUBLE.

Last summer I went out to the cornfield where my father was plowing, to tell him that the bees were swarming, and that I would plow till he hived them. I got myself into trouble, and had to plow all summer.

HARRY NEFF.

Clive, Iowa, Feb. 8, 1885.

Now, Harry, I do not pity you a bit. For my part I can not think of any thing in this whole world that would be better fun than

to plow. May be I would get tired of it, but you see it is doing something outdoors, right under God's blue sky, and then it is something useful too; and even though you do get very tired, how one does enjoy his dinner after such kind of work! and then that feeling of peace and happiness after you get through at night, and have your team all nicely cared for and put away! A boy who can do a good job of plowing need never be afraid of losing his situation; and if banks break, and money is hard to get, and all these other things happen, what does he care? I can very well remember when I used to hate plowing; but for all that, I can not understand now why I ever was so foolish.

ONLY 8 LOST OUT OF 147, AND THAT IN CANADA.

We have twins. We call them Wiman and May. They are four months old. Father had 147 colonies of bees; 8 of them died. They were out of doors. Those in the cellar are doing well. Father gave me 2 colonies. They are both alive. I do chores, and harness the horse for father. I had my leg broken when I was 6 years old, and have not been able to go to school much.

SPENCER ORVIS, age 9.

Whitby, Ont., March 23, 1885.

Very good, Spencer. With 147 colonies of bees, 100 bushels of alsike clover, and twins four months old, it seems to me your father ought to be a happy man. See p. 280.

AND HERE IS A LETTER FROM 4½-YEAR-OLD BERTHA.

I am 4½ years old. I rock the babies for mother, and play with Lily. She learns not to tear books when she has them. Does Huber have books to play with? Lily tries to help me clear the table. Does Huber try to work any?

Whitby, Ont., Can. BERTHA ORVIS, per mother.

Thank you, Bertha. If you were at our house, you would think Huber did have books to play with. When I go home nights and get my *Ohio Farmer* he climbs up on my knee and begins, "Pic'er-book, pic'er-book, papa." And then when I ask him what "pic'er-book" he wants he will reply, "Want burny man;" and if I do not get it right off he will keep saying, "Burny man, papa, burny man." He means by this that he wants one of the old readers that has a picture in it of a man carrying a child out of a burning building. He can find the book anywhere in the secretary, just by seeing the back of it, when there are hundreds of other books almost like it. Yes, Huber tries to work. I do not know that he ever accomplishes very much, but I do know this: That every few minutes he makes a great heap of work, as they say down South. Well, Bertha, I think you do pretty well if you manage to rock both of those twin babies, and only 4½ years old.

COVERING BEES WITH HEMLOCK BOUGHS, ETC., FOR WINTER.

My papa keeps bees. Last year he had 4 swarms, spring count; they swarmed so we had 12 that year. In 1883 we got 179 lbs. of comb honey, and 90 lbs. of extracted. They all wintered but two. He wintered them out of doors, just as they stand in the summer. Our bees did not swarm at all last year, and we got only 100 lbs. of honey, and that was all clover, as basswood did not blossom. In the fall, papa

bought and took on shares 14 more, so he has got 26 stands now. He thinks a great deal of bees. In fact, we all do. Mamma sometimes hives them.

One of our neighbors has at two different times lost all of his bees by covering them with hemlock boughs. One year he lost 7, and another 20. The man who kept them thought that that did not have any thing to do with it, but my papa thought that was what killed them. What do you think?

BLANCH BULKLEY, age 13.

New Woodstock, N. Y., March 1, 1885.

I do not think the hemlock boughs did the bees any harm, friend Blanch, unless it was because they kept the sun from shining on the hives. Of course, it would keep off the wind some; but what we want to do is to keep away all the wind and at the same time let the hives have all the sunshine they can get.

ROY'S ENCOURAGING REPORT.

Pa began keeping bees when I was a year old. He and uncle Ned saw a swarm of bees flying over their heads in haying-time. They stopped them and put them in a hive. In a few days he bought three swarms in box hives for \$21. That fall he bought 10 swarms in frame hives for \$100. The next spring he bought a honey-extractor, uncapping-knife, and 10 lbs. of foundation of you. During the summer he made enough money from his bees to replace all the money he paid out for his bees, extractor, knife, foundation, lumber, etc., that he used. He has always made his own hives, crates, and sections; and for the last 7 years, foundation. He has never advertised, but he has lots of customers from far and near. He runs his machine with a horse power. He made a rigging to sandpaper sections, that cost 25 cents. It sandpapers them as they are sawed, and saws them ever so nice. Pa has taken your journal ever since he kept bees. He has always made bee-keeping pay. He had 75 swarms last spring; sold some in the fall, and had 99 left to winter. He got over 6000 lbs. of honey; sold 413 lbs. comb honey to one firm in Charlotte.

Chester, Mich. Roy B. HUBBARD, age 10.

Well done, Roy; but it seems to me that machine that sandpapers the sections just as they come from the saw, and costs only 25 cents, needs a little more explanation. Can't you or your pa explain a little more, for the benefit of the brethren?

SEVEN-YEAR-OLD CHARLIE TELLS US HOW TO HARNESS THE HORSES WHEN THE BEES ARE CROSS.

My mamma has told me about you, and how kind you are to little boys. I should like to see the wheelbarrow full of books you have for little boys. My mamma works ever so busy amongst the bees, but they are eight miles from home, so we have to leave some one at home to take care of things when we work with the bees, for mamma says I must find the queens for her, as I have such sharp eyes.

I want to tell you how to harness horses when bees are cross. Get get the smoker ready, put the harness on the horses, and take them to the wagon. Let one go along with the smoker, and walk around the horses, puffing the smoker, and the bees will all fly away. That is the way we do, and it works first rate. I learn my lessons and recite to my mamma. I read the *Youth's Companion*, add, subtract, multiply, and divide, without a book, and I am learning

the 16's in multiplication. I write, and study geography. I have done all this to-day, and helped irrigate, and the water drove a gopher out, and I killed it; and then Gipsy, my dog, ate it. We have a carp-pond, but they are all big, as the water is too cold for the spawn to hatch. CHARLIE WILSON, age 7.

San Bernardino, Cal., Apr. 2, 1885.

ESTHER'S STRAWBERRY LETTER.

My ma takes GLEANINGS, and we are pleased with it and the ever-welcome Home Papers. You wanted all that loved to cultivate or grow strawberries to inform you of their mode of cultivation and success. Here is our way: Set out in April or August; mulch in October so thick you can't see the ground by walking over them; this keeps them with green leaves all winter; the ground will not thaw out until it will stay so, and frost or light freezes do not reach them in the spring. Our patch of 12 by 16 feet did not do quite as well as some I saw in the newspaper, which gave from 80 to 120 quarts to the rod; but we got 32 quarts, besides some that were not measured. We took some to the festival, and sold them, three for a nickel. The largest one we measured was $7\frac{1}{4}$ inches in circumference; the most on one stem was 17 large berries.

ESTHER A. FREDLY, age 12.

Silver City, Iowa, April 20, 1885.

STRENGTHENING WEAK COLONIES BY THE PURCHASE OF BEES BY THE POUND.

My pa bought one stand of black bees, the summer before last. They have swarmed twice. The last swarm came out on the first day of July, and we were all away at a picnic. It was the eighth day after the first swarm. We expected it would come out, but we did not like to miss the picnic. But, however, when we came home, after looking around a while pa saw a ball of bees the size of a quart dipper. There was a heavy storm of rain that day, so they got under a board for shelter. About the last of August, pa was examining the first swarm, and he found that they had neither eggs nor brood, so we wanted to know from Mr. W., who was accustomed to bees, what was best to do. He advised us to get a few bees and a queen. Pa got $2\frac{1}{2}$ lbs. of Italians and a queen. At night we smoked the black bees down, and then put the Italians in. But in the morning, when we went out, we saw all the black bees scattered about on the ground. Please let us know if it was right to put so many Italians with the blacks. Pa has no smoker; but when he examines the bees he blows some tobacco smoke into the hive. People say it injures the bees.

CHAS. HAMILTON, age 12.

Apto, Ont., April 14, 1885.

Friend Charles, your father did all right, only that he did not watch the bees long enough to see that they united peaceably. He should have remained near the hive; and as soon as the first black bee came out stung, they should have had a good vigorous smoking. It is never safe to neglect this. You might have lost your $2\frac{1}{2}$ lbs. of Italians. I am afraid now that they are queenless. I do not think that tobacco smoke injures the bees; but, Charley, I am quite sure that it does injure the man who blows it on the bees. Suppose you tell your pa that we will furnish him a bee-smoker if he will give up the use of tobacco, and give us the usual promise.

OUR HOMES.

Hast thou entered into the springs of the sea? or hast thou walked in the search of the depth.—Job 38:16.

WHEN we had got into the cave perhaps a quarter of a mile, the guide pointed with his cane to the tracks of oxen, made by the saltpeter workers more than sixty years ago. I stooped down with my knife to cut one of the footprints, to see whether it had really turned to stone, as it looked to be. Our good friend Matt objected, however, remarking that, if every visitor were allowed to do that, the cave would soon be all whittled up. Pretty soon we had good evidence of the wisdom of his restrictions, for the ceiling to the cave, where it came down so as to be within reach overhead, was literally covered with names, dates, and inscriptions; in fact, it reminded one of a country schoolhouse with its carvings and markings. The guide remarked that this work was all done a great many years ago, and that for some time nothing of the kind has been allowed. I noticed one inscription something like this: "John Jones, 1815." It was made by holding a lamp so near the white ceiling as to blacken it with the smoke, and rude letters were made in this way. Think of smoking up these beautiful white ceilings, just to let people know that John Jones passed through here! I am glad this work has been stopped; and as I shut my knife, and put it back into my pocket, I concluded we must all live and learn. Further back in the newer explorations, the eye is not pained by such uncouth lettering.

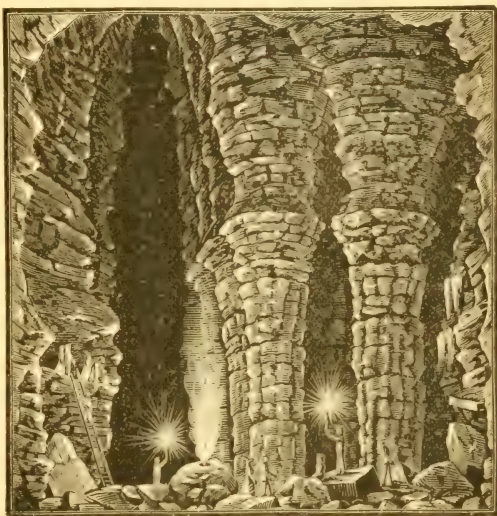
Now we come to the stalactites. Some of them are old and hard, and look as though they had stood for centuries. Others are damp, and a drop of water hangs on the lower end, slowly evaporating, and adding to the length little by little, much in the way that an icicle increases in size and length as the water runs off from the roof from the melting snows on a wintry day. You can tell by the taste of this water as it trickles down, that it is charged with rocky matter in solution. Some of it tastes strongly of alum. When the water drops slowly on to the floor below, it evaporates by the currents of air through the cave, and thus piles up. By and by these stalagmites and stalactites meet and form great pillars, a view of which I give you in the cut above.

The trickling of the water has, during the ages, formed these immense supports, as they seem to be. This mammoth dome,

which is the largest of all the domes yet discovered in the Mammoth Cave, is about 400 feet long, and 150 feet in length. The height varies from 80 to 250 feet. At the left of the picture we have a view of what looks like cliffs. Some of the visitors have climbed up part way of the cliff by means of a ladder. In one place these cliffs look so much like cliffs on the landscape that they have been named "Kentucky Cliffs."

A little further along we found a place where, back among the shelving in these cliffs, little partitions have been left so as to form veritable pigeon-holes, as if some giant had had them made to tuck away his papers. Some of the pigeon-holes, when reached by a ladder, would make a very commodious room for a moderate-sized family.

And now we come to the Methodist Church. I always liked churches (that is,



MAMMOTH DOME AND CORINTHIAN PILLARS.

of late years); and when our guide pointed to us the pulpit, and indicated that the logs placed conveniently around before it were the seats used by a band of worshipers fifty or sixty years ago it gave me a thrill of pleasure to think that our early fathers worshipped and revered the same God that we do now. Services have been at different times since held in this same old Methodist Church, as I have been told. The log seats are in a state of perfect preservation, and look now just as they did when first put there, only somewhat discolored by age. From the absence of schoolhouses and churches in the country around Mammoth Cave, I am afraid that the present age is hardly keeping up the devotional spirit of fifty years ago when they had meetings here regularly.

About 150 yards beyond the Methodist Church, the guide pointed to us ruts cut in the soft mud made by the cart-wheels from the saltpeter works of 1812. This mud has now become a sort of hard stone, probably on account of the minerals held in solution by the water that helped to make the mud. And now we come to the eight huge vats where those old saltpeter works were managed, as I told you about last month. It has been suggested, that, if other sources failed, the Mammoth Cave would at any time furnish enough saltpeter to supply the world. Below we give a cut of these vats.

Before us are some huge rocks that at some time or other have fallen from the ceiling; in fact, when Matt burns one of the Bengal lights so as to light up the ceiling, you can see just where a great rock broke off. What is to hinder more of them from dropping off and burying up our little party?



GOthic GALLERIES AND OLD SALT-VATS.

Our guide tells us of a Scotchman who got so far, and, fearing that some rocks would tumble down, stopped and refused to go any further. Shall I tell you why there is no danger of their falling now, friends? It is because the rock is hard and firm, compared with what it was at the time these convulsions happened. The greater part of the Mammoth Cave is now dry and hard and firm.

By this time, one of our number whom Ernest informed me was a fellow-student in the college (but one with whom he was but little acquainted), uttered an oath. It fairly startled me. How could any one, in *such a place*, take the name of the great God in vain? A little further on, this same young man uttered an indecent remark. The eleven who composed our little band were men from different parts of the world, and from different avocations in life; but I was pleas-

ed to note that not one of them took any notice of his remark, even so much as to smile. Is it true, that blasphemy and impurity are always linked together?

Somebody sang out pretty soon, that he was thirsty. "All right," said the guide; "I was expecting somebody would be making that remark just about this time. We will go over to Wandering Willie's Spring, and get a drink."

Did I tell you that blind people are greatly pleased with Mammoth Cave? Singular, is it not? Well, Wandering Willie was a blind boy. He visited Mammoth Cave, and enjoyed himself hugely. Finally he was missing. After a little search they found him near a beautiful trickling spring. His sharp ear had caught the sound of dropping water, and the spring has been named after him. The water falls from the ceiling of a little cavern into a beautiful little round stone basin, and then trickles away through a little channel worn in the stone. A tin dipper hung from a nail in the ceiling; and while we stood around the spring, the guide passed the water, much as they used to do when we were children in the old schoolhouse, back among the woods. The water has a pleasant mineral taste to it. Here we are at the Giant's Coffin. We give a picture of it, but I do not think it is a very good one, on next page.

This coffin is 40 feet long, 20 feet wide, and 8 feet or more deep. Said I, after contemplating it a while, "Friend Matt, is there a little hole in the wall at the back side of that coffin?"

"Yes," said Matt, "there is."

"Well, that is the hole we want to crawl into."

But Matt replied that we could not crawl into that hole until he got ready, and we were going somewhere else first. The lady at the hotel had told us that we must be sure to ask to go back through that narrow passage; but as we had the promise of taking it in afterward, I was contented. A little further on we came to a ceiling almost as white and beautiful as a whitewashed wall; and, strange to tell, standing out in relief on this wall were strange figures of black oxide of manganese. The artist has attempted to show you one called the Ant-Eater. The Ant-Eater is, however, a great deal longer than is shown in the cut, and it needs a guide to explain what it is, or you might not understand it. A little further on you come to Barnum's Fat Girl, pictured on the ceiling by this same wonderful process from nature's laboratory. Still further, the Giant and Giantess. The giantess sits on the floor, looking up at her liege lord who stands over her, and for pastime they are tossing the baby back and forth.

The guide now announced that we would go back and take in that hole in the wall

behind the Giant's Coffin. Well, I tell you it is a hole. It is low and narrow. We had to almost get down and squeeze in; and if I were exploring it myself I should say, "Why, this surely can not be any thing; let us go back." Presently, however, when most of us began to get red in the face and feel cross, the ceiling began gradually to "let up" somewhat. Finally, we drew a breath of relief when we could stand up and throw back our shoulders. Pretty soon we came to large rooms, until it was fully as large as the main Mammoth Cave. It seems funny that every little hole one sees, if he can manage to squeeze into should soon begin to open out and enlarge, and finally open up into large domes and caverns, and great beauties.

Here we come to a lot of monuments. They are made of loose stones put up pyramid fashion. Some of them were stuck full of cards and papers, and they bristle like feathers from a sitting hen when you want to count her eggs, for instance, to see if they are all there. We looked to the guide for an explanation. "Why, boys, you see the managers of the cave have shut down on people writing their names all over; but to satisfy the craving for leaving a record of your visit, they allow visitors to stick their cards in these monuments. There is a monument for each State, as you see. There is Ohio. You, my friend, are to pick up a stone and put it there, with the monument of your State; and you Pennsylvania man can put one there." We did as we were ordered, and the guide told us that these monuments were made by each visitor placing a stone; so you see I helped to build a monument to the memory of the State of Ohio.

Halloo! here is a village. Nine stone houses in regular order, built of hewn stone, and all perfect in every respect, except that they are roofless. We stop and look at the guide inquiringly; and while he tells us that a lot of poor consumptive brothers and sisters lived here five months in these stone houses, without once seeing the light of day, we stand around him with open mouths, in astonishment. They were wealthy people from Cincinnati; and, like consumptives when pretty near their last days, they were continually catching colds; and before they could recover from one they would catch another, and somebody suggested that, as the temperature here is even and regular, and as there are no drafts of cold air, they might possibly extend their period of life a little longer, even if recovery were impossible. The exhilarating air, too, that enabled us to walk so many miles without thinking of fatigue (see p. 284, April 15), it was thought, might be a benefit to these poor sufferers.

"Well, how did it turn out?" we asked.

"Well," said our guide, and we thought a

little sadly, "they did not get any better, and the project of a sanitarium in Mammoth Cave was given up."

One of the poor sufferers died in the cave; and his friends thought he died sooner than he would have done had he been outdoors. They suffered for want of sunshine, just as one might have supposed they would, and just as the plants suffered in the little gardens adjoining these stone houses, where they tried to have a garden. If somebody could let the sunshine down through by means of some enormous sashes (like the crystal palace for instance), and then have the air of Mammoth Cave, with the other appurtenances, it seems to me the project might be a success after all. If it would not cure consumptives, may be it would help us to winter bees, and that is the point that is dear to our hearts, many of us, just now.

We now enter one of the most beautiful



THE GIANT'S COFFIN.

features of Mammoth Cave. It is what is called the Starry Chamber. The walls widen out and rise up in precipitous cliffs, so high that the ceiling is lost in darkness. A bench stands against one of these abrupt cliffs, and the guide remarks that perhaps we would like to sit down and take a little rest. Then he extends his hand for our lanterns, and we look at him a little curiously as we hand them over. Finally he has the whole eleven dangling in his two hands, and down he goes amid the loose rocks into a low remote corner of the cavern. Pretty soon he is lost to view, and all at once a sort of awe begins to steal over us as the dense darkness begins to penetrate our very bones. Dark? Why, it is literally the blackness of darkness. One begins to feel a little queer as time passes; and as Matt does not come back, some murmurs begin to arise. The friend before mentioned utters an oath; but it strikes me again, that, of all places in this world, this is the wrong

place to swear. Finally somebody utters an exclamation of surprise, and calls us to look up. Wonder of wonders! There are the stars twinkling down upon us from the vault overhead. Yes, and there is a comet, and anon some fleecy clouds appear, illumined by the rising sun. Oh yes! this is the Starry Chamber, and the light that looks so irresistibly like a gray tint of dawn is caused only by some Bengal lights the guide is burning. As we listen we can hear them hiss, and finally he comes dangling his lanterns, and laughing at the trick he has played upon us. The ceiling of this Starry Chamber is as black as black marble; and spotted all over its inky surface are little crystalline spots of crystallized gypsum; and as the light strikes them this makes the stars.

A little further, and a great log of wood sticks down from the ceiling. Who put it there? How did it get there in Mammoth Cave, any way? and who stuck it through that great rock? The water did it ages ago, without question, and surely there must have been communication with the upper world somewhere not very far off.

Pretty soon we have not only cliffs, but cliffs covered with drifted snow. Do you want to know what the drifted snow is? Why, it is epsom salts. Here we find footprints made by the barefooted boys. May be the footprints were made yesterday, but more likely one-fourth or one-half a century ago. No dust falls here, and every thing remains just where it was put, until some human agency dislodges it.

Wright's Rotunda now opens before us. It is 400 feet across in its shortest diameter. The ceiling is from 10 to 45 feet in height, and perfectly level, the difference in the height being produced entirely by the irregularity of the floor. The lamps fail to illumine these great chambers, and nothing but the Bengal lights can dispel the darkness.

Now we come to the Bride's Chamber. Once, a long time ago, a fair maiden wanted to get married. Her good mother objected, however, and finally exacted from her a promise that she would not marry any man on the face of the earth, without her mother's consent and approval. Then the two fond ones went down into Mammoth Cave and were married there, thus fulfilling the letter if not the spirit of her promise, that she would not be married to anybody on the face of the earth. Many couples have been married there since.

Here we are, at the Wooden-Bowl Room. Wooden bowls are all over the ceiling, turned upside down, only they are made of stone instead of wood. In fact, the whole room seems to be almost the shape of a great wooden bowl. It is also said, that years ago, a veritable wooden bowl was found here in this room. The peculiar formation of the rock, and the character of the water which flowed through it, I presume, had something to do with the formation of these queer-shaped cavities.

"Danger on the right!" signals Matt, and we crowd off against the left wall, peering anxiously into the thick darkness. Pretty soon Matt lights a roll of oiled paper and tumbles it overboard, and then we can see

what the danger is. Down, down it goes, whirling spirally, lighting up the darkness for a distance of 65 feet. The chasm is about 25 feet across, and over it a dome 55 feet high. Now, then, the Labyrinth, a sort of rude stairway fashioned by nature, lets us go down hill at a pretty steep rate; then we go up hill, then we go down hill, and so we go twisting and turning, up and down, until we hardly know where we are or who we are. Finally a halt is called, and we are permitted to look through a window. Listen! Sure enough, that is water dripping; yes, and we begin to feel thirsty again as we hear the tinkle of a little waterfall. Down go the sheets of oiled paper again, blazing as they fall, and we look down 117 feet, then we look up 100 feet, and this is what is called Gorin's Dome. It used to be called 500 feet; but accurate measurements show it as above. We go back a piece, and then we come to the Bottomless Pit. A bridge goes across it, with an iron railing. The bridge looks as if many feet had trodden it. Before this bridge was built, visitors were obliged to stop here. This Bottomless Pit also extends upward as well as downward. Pensico Avenue is a mile long. By this time we had got so accustomed to wonderful things that I began to take things as a matter of course; and had Matt the guide gravely informed us that the next passage would take us right through the earth, and out into China, in about fifteen minutes, I do not know that we should have been very greatly surprised.

As we passed a great awkward-looking rock, something like one saucer lying inverted over another, Matt hit it with his cane, and said, "Sea-turtle." After he mentioned it, we agreed that it did look like a sea-turtle; but it was a whopper, I tell you. Scylla and Charybdis, two more great pits.

While I was gazing at the wonderful domes that we found above these deep pits, the thought struck me that possibly the sinkholes that I saw the water running into along the railroad track had some connection with these domes. I asked Matt about it, and he said he presumed it was the case. The water flows down in great quantities from the hills, or perhaps mountains, above. It runs into these valleys that I have told you about, sinks into the ground, and keeps on sinking and dissolving the formation until these deep wells or pits with their great domes above them are formed. At the foot of one of these great pits the floor widens out so as to cover about an acre in extent, and in one part of this great room is a body of water.

And now, friends, I have reached the close of my allotted space for this issue, and yet my story is not all told. A great truth impresses itself upon my mind as I go over these details. As we busy ourselves with our every-day cares about our separate little homes, how much do we realize of the magnitude and greatness of this vast universe about us? We know comparatively little of this earth on which we live; and even after we have sailed or traveled over its surface, there are regions beneath its surface, to be explored and to be studied, as I have been

telling you. If this whole earth, then, is but a grain of sand compared to other worlds, what are we, measured by the side of the great God who rules over all? and how little are we able to measure him in his infinite greatness!

Hast thou entered into the springs of the sea? or hast thou walked in the search of the depth?

FRIEND COOK TALKS TO US ABOUT POTATO CULTURE.

AND ABOUT FRIEND TERRY'S POTATO-BOOK.

DEAR MR. EDITOR:—I have read with exceeding interest the A B C of Potato Culture, by T. B. Terry. It is most refreshing to read a work so gushing full of real practical common sense, and from the pen of one who "has been right there" every time, and tells only what he knows, and that the product solely of earnest thought and study, mixed with hard sense. The fact that great gain comes only through great care and painstaking labor, is graphically enforced. Nothing given nothing gained, is God's law. He who reaps without sowing is a thief. Good potatoes, and bushels of them, come only from sweat of brawn or brain.

May I say, Mr. Editor, that every land-tiller could well afford to buy and read this book, even though he is never to raise a potato, as the truths are almost all so broad in their applications? How pertinent to all successful agriculture is the advice to practice thorough tillage, as a fertilizer, a mulch and to irrigate! The talk of manures and their application is admirable. Though it is urged later to buy most products, it is well said that manures should be made, not bought.

The planting in drills is precisely what I do with corn, and largely for the same reasons. Then the Thomas Harrow for early weeding, and, I would add, stirring soil, and thus mulching and irrigating is just what I have proved one of the best things for early weeding of corn, until the plants are two or three inches high. His hints as to selection of seed may well be pondered and practiced by all growers of plants or animals.

The destruction of "Colorado beetles"—not "bugs"—is also well discussed. Certainly no one who can keep the beetles at bay, even at the same expense, should ever use Paris green; how much less, then, when it can be done at half the expense by hand-picking!

And, Mr. Editor, how good those words about hiring the children, and *paying them too!* I was not surprised that so able a potato-culturist should say that he did not know the cause of the scab. If it were from myriopods, as some assert, could so good an observer be ignorant of the fact?

It seems to me that the remarks about handling the crop—in fact, all the well-digested advice of this admirable brochure—would set any one to thinking, in a way to have rich fruit in any line of agriculture.

As I read about burying potatoes, I could not but think of my own words on "clamps" for our bees: "I much prefer the cellar where we can know how matters are progressing." As Mr. Terry says, the cellar storing is less laborious than the burying, which applies also to bees as well.

But, Mr. Editor, if we indorse all this work, we must say amen to the chapter on "Specialty" as well. And then won't brother Heddon claim us as his disciples? While it is best for a man to concentrate his efforts so that all work shall be done in the best way, it is also equally desirable to have a variety in just so far as it does not prevent this excellence of execution. We all know that a change in work means recreation.

A. J. COOK.

Agricultural College, Mich., May 8, 1885.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT.

EDITOR AND PUBLISHER.

MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, MAY 15, 1885.

Let nothing be done through strife or vainglory. PHIL. 2:3.

THE A B C of Potato Culture is meeting with a most gratifying sale. Price 35 cts.; by mail, 38 cts.

BEESWAX.

UNTIL further orders I will pay 25 cts. cash, or 2 cts. in trade. This is to take the place of the advertisement on the cover of the last number.

UNTESTED QUEENS.

THE demand has opened up beyond the supply, as is usual during this month. The way they are *now* coming in from the South, however, we shall soon be up with the orders.

THE BEE BUSINESS PROGRESSING IN ARKANSAS.

We notice by one of the papers, that Mr. Anthony Opp, of Helena, has sold to Mr. Robert J. Adams, of Chicot Co., Ark., 200 colonies of bees. But a short time ago Mr. Opp made a shipment of 50 colonies to another customer in Chicot Co. The price paid for the 200 was \$4.50 per colony.

THE WINTER IS PAST, AND THE SUMMER IS AT HAND.

A GREAT many reports in regard to winter losses are at hand; but the season has now come when we must turn our attention to something else than talking over our wintering troubles; therefore let us drop wintering for the present, and take up honey-getting.

IMPROVEMENT IN SIMPLICITY SMOKERS.

Friend J. A. Green, of Dayton, Ill., suggests that the Simplicity smoker is made much handier by having a stop for the door so it shuts down and strikes firm when the opening for putting in the fuel is closed. He makes them by chopping a nick in the circumference of the bottom of the fire-pot. We do it by putting in a tinued rivet, allowing it to project enough to stop the door.

ERRATA.

In the advertisement of G. J. Flansburgh, in our issue of April 15, his initials were printed E. J. Please note.

On page 300 of our issue of May 1, 23d line of first column, we made Prof. Cook speak of beetles looking like little *bugs*. As a matter of course, he meant to compare the beetles with the *bugs* that fall off.

On page 317, friend J. H. Brown says: "The mice destroyed the rest; all came out right." He meant to say, "The mice destroyed one; the rest came out all right." This, however, was the fault of the manuscript, and neither editor nor reader could make any thing else out of it. Please don't make a straight mark for *one*, friends.

THE A B C OF CARP CULTURE.

I HAVE often decided that I would never again advertise a book or any thing else until I had got it in my hands. Well, the above book was so near finished, months ago, that the greater part of the proof-sheets were in my hands. For some unknown reason it does not make its appearance. The A B C of Potato Culture is having a nice sale, for which we extend thanks.

TOBACCO.

AFTER the doctors decided that Gen. Grant could not get well, he just went and got well himself; or, at least, he is able to be around, as I suppose you all know. I presume you all know, too, that he has stopped using tobacco; and may it not be that the discontinuance of tobacco of itself has had something to do with his recovery? I have been wondering whether he ought not to have a smoker with the rest of the brethren; but then, I do not know whether he is a bee-keeper, and so I have not as yet decided to send him one.

PACKING PLANTS NICELY TO GO BY MAIL.

Our thanks are due to C. Weckesser, of Marshallville, O., and A. T. Cook, of Clinton Hollow, N. Y., for sample plants. The first was three Miner's Proflic strawberry-plants, that opened up as fresh as they were when taken from their places in the garden; in fact, one could almost imagine that the dew yet lingered on their bright-green petals. Friend Cook sends us some splendid specimens of Houghton gooseberries and Golden-Cluster raspberry-plants. I should say, that both of the above-named friends understand their business of mailing plants, to a dot.

COMBS WHERE THE BEES HAVE DIED.

SOME of the veterans may get tired of hearing this old story over and over again; but there are others, a host of A B C scholars, who keep inquiring about it every spring, especially after such a mortality as has just come over our land. Your combs are just as good as they ever were, even if there are dead bees in the cells, and the combs have been neglected until they smell badly. Just put such combs, one at a time, in the center of a good strong colony, and the bees will fix it in a twinkling. Don't put too many in a weak colony, at one time, or the bees may get disgusted and swarm out. But a strong colony will take one or two at a time, and make them nice and sweet in four or five hours. It is a good plan to shake the dead bees out of the empty hives, so far as you can handily. Don't melt your combs up for wax, if they are good straight worker-combs. The honey that is contained in them will come in excellently for building up new colonies; and if you do not think it is wholesome for another winter, manage so as to have the stores consumed in rearing young bees.

OUR OWN APIARY.

At this date, May 6, the bees are getting loads of pollen and considerable honey from the soft-maples. We usually have fruit-trees in bloom by May 1, but this year they will be a week or ten days later. By the way, it seems to me due credit has never been given the maples, for the reason, probably, that we so seldom have our bees strong enough to do justice to them when they are in bloom, and many times they come in pretty nearly with fruit-

bloom. Yesterday, while we were plowing down by the creek, with our new plow, "Solid Comfort," the bees were just roaring among the maple-trees. It seemed almost as if we were at work in an orchard in full bloom. When a thunder-cloud came up, the bees poured toward the apiary so as to make a good deal such a roar as in basswood time. I tell you, it is pleasant to have a hundred or two of *strong* colonies at a time when we used to have spring dwindling. Our bees have no disease of any kind, and we have not had a dwindle, unless it was a colony that got soaked by a cold rain when a cover of the hive blew off, and even that was carelessness.

May 14.—Here it is, and not a fruit-bloom yet to be seen; but the bees are just roaring on the hard-maples. Two hundred booming colonies get up quite a roar in the month of May, I assure you. The pounds of young bees that have to be shaken from their combs, however, to be put aboard of every train that leaves our depot, effectually extinguishes any thought of swarming. With the amount of business we are doing in bees by the pound, I fear our 200 colonies will not keep their strength very long; no, not even with another hundred purchased from neighbors Rice and Shook to back them up. We shall soon begin to have reinforcements of new swarms from the farmers round about, however, and we hope to keep up our reputation for prompt shipment.

BUCKWHEAT FOR SEED.

Just about this time of year our troubles commence on orders for buckwheat. Do you want to know why on buckwheat more than other seeds? It is because it is quite bulky, and of but little value. We offer common buckwheat for seed now for \$1.25 per bushel, or 35 cents per peck. Somebody away down in Texas orders half a bushel; it weighs 25 lbs., and is worth only about 65 cents. If we send it by mail, it would take over \$3.00 worth of postage-stamps; if by express, the charges would be from \$1.00 to \$1.50; by freight, perhaps as much. The best way we could fix it, the charges would be a good deal more than a bushel is worth; and we have been obliged to make arrangements with all railroad and express companies, to pay all charges when our customers refuse to pay them, to prevent having them stopped on the way. Whatever is shipped with a card on, showing that it came from A. I. Root's establishment, we want every express company and railroad company in the world to understand that A. I. Root is good for the charges, even if the man to whom it is sent is not. Now, then, what are we going to do? It is quite customary to order seeds by express, after the ground is all ready; and some men always take whatever they order, no matter if the express charges are \$2.00 on 50 cents' worth of seeds. But there are other men, generally those new to the business, or those who are not very well posted in regard to business rules, who will let a thing lie in the express office until it is sold for charges, whenever such charges are more than they expected. If the one who orders such bulky seeds that cost but little would just add, "I know the express charges will be heavy, but I am prepared to pay them," how pleasant it would make every thing! Do you not see the point, friends? We like to serve you; it is a pleasure to jump and run to execute your orders; but we hate to be burdened with heavy losses as the reward of our alacrity.

FOR SALE!

40 Colonies of ITALIAN and HYBRID BEES IN CHAFF HIVES.

Price \$150. cash for the lot, to be taken at the apiary.

J. H. PEIRCE,
104 DAYTON, MONT'G Y CO., OHIO.

MICHIGAN POULTRY FARM.

W. R. & I. S. PHILLIPS, Proprietors,
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Breeders of only pure stock, White and Brown Leghorns, Black Cochins, Langshans, Wyandottes, and Silver-Bearded Polish. Prices clear below other breeders for the same quality. Eggs from \$1.50 to \$3.00 per 15. Stock for sale in season. For large orders, write for special discount. No circulars.

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THE ONLY MANUFACTURERS IN MISSOURI, of Apiarian Implements. Send for Circular and Price List of our Hive with the **Invertible** Surplus arrangement for comb honey. Also **Smokers, Comb Foundation, Italian Queens, etc.** **KENNEDY & LEAHY,**
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Full Colonies, Nucleus Colonies, and Queens, From Our New Strains; Also General List of Apiarian Supplies.

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Write your name and address plainly on a postal, and get my prices before ordering your supplies.

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IT IS A SUCCESS.

Rabbits in the apiary will keep the grass and weeds down better than a lawn-mower. Circular free.

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THE INVERTIBLE HIVE!

INVERTIBLE FRAMES,

Invertible Surplus-Honey Cases,
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My new Illustrated Catalogue is now ready and will be mailed to all who may apply for it.

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Comb foundation, equal to any in the market, at reduced prices. Send for samples and price list.

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Dunham & Vandervort Foundation

We have bought a large stock of choice yellow beeswax, and can furnish Dunham comb fdn. for brood comb, cut to any size, for 45c per lb.; thin and bright yellow fdn., for sections, at 50c per lb. Extra thin Vandervort fdn., 10 to 12 sq. feet to the lb., for 55c per lb. We guarantee our fdn. to be made of pure beeswax, and not to sag. Will work up wax for 10c per lb. for brood, and 15 and 20c per lb. for sections. Send for prices for 25lbs. or more.

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IF YOU WANT

A GOOD ONE-PIECE SECTION *CHEAP*.

Send to us. Sample and Price List Free.
SMITH & SMITH, KENTON, HARDIN CO., OHIO.
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BEESWAX.

Made into Given foundation on shares or for cash, on favorable terms. Best machinery, experienced hands. Western bee-keepers, please take notice; save freight on bees, and secure an article as good as any for all purposes.

JOHN BIRD,
7-12db Bradford, Chickasaw Co., Iowa.

BEECH'S QUEENS

Warranted Italian queens, from Imported mother. May 1st, \$1.00; \$10.00 per doz. Choice select tested queens, \$3.50. I guarantee safe arrival and satisfaction.

5-12db **G. A. BEECH,**
Box 24, Guilford, Nodaway Co., Mo.

HONEY. This is what we all are after. One way to get it is to get the right kind of bees. Try our new strain of **ALBINO BEES**. For particulars, send for our new circular for 1885.
7-12db **FLANNIX & ILLINSKI,**
Box 95, Belleville, St. Clair Co., Ill.

MUTH'S HONEY-EXTRACTOR, SQUARE GLASS HONEY-JARS, TIN BUCKETS, BEE-HIVES, HONEY-SECTIONS, &c., &c.

Apply to **CHAS. F. MUTH, CINCINNATI, O.**
P. S.—Send 10-cent stamp for "Practical Hints to Bee-Keepers."
1tfdb

BE SURE

To send a postal card for our illustrated catalogue of **APIARIAN SUPPLIES** Before purchasing elsewhere. It contains illustrations and descriptions of every thing new and desirable in an apiary.

AT THE LOWEST PRICES.

ITALIAN QUEENS AND BEES.

J. C. SAYLES,
1-12db Hartford, Washington Co., Wis.

VANDERVORT COMB FOUNDATION MILLS.

Send for samples and reduced price list.
2tfdb **JNO. VANDERVORT,** Laceyville, Pa.

DADANT'S FOUNDATION FACTORY, WHOLE-SALE AND RETAIL. See advertisement in another column.
3btfdb

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Names of responsible parties will be inserted in any of the following departments, at a uniform price of 20 cents each insertion, or \$2.00 per year.

\$1.00 Queens.

Names inserted in this department the first time without charge. After, 20c each insertion, or \$2.00 per year.

Those whose names appear below agree to furnish Italian queens for \$1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen be reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delay as may be unavoidable.

Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with * use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for \$1.00 before July 1st, or after Nov. If wanted sooner, or later, see rates in price list.

- *A. I. Root, Medina, Ohio. 7td
- *H. H. Brown, Light Street, Columbia Co., Pa. 7td
- *Paul I. Viallon, Bayou Goula, La. 7td
- *S. F. Newman, Norwalk, Huron Co., O. 7td
- *Wm. Ballantine, Sigo, Musk. Co., O. 7td
- *D. G. Edmiston, Adrian, Len. Co., Mich. 9td
- *S. G. Wood, Birmingham, Jeff. Co., Ala. 7td
- *S. C. Perry, Portland, Ionia Co., Mich. 9td
- Jas. O. Facey, Tavistock, Ont., Can. 7td
- *H. J. Hancock, Siloam Springs, Benton Co., Ark. 9td
- *E. T. Lewis, Toledo, Lucas Co., O. 3-1
- *C. C. Vaughn, Columbia, Maury Co., Tenn. 9td
- G. M. Doolittle, Borodino, Onondaga Co., N. Y. 3-13
- D. A. McCord, Oxford, Butler Co., O. 5-15
- S. H. Hutchinson & Son, Claremont, Surry Co., Va. 5-3
- *E. Kretschmer, Coburg, Mont. Co., Iowa. 11td
- *W. A. Compton, Lynnville, Giles Co., Tenn. 11td
- *J. L. Hyde, Pomfret Landing, Wind. Co., Ct. 7td
- D. McKenzie, Camp Parapet, Jeff. Parish, La. 7td
- *J. J. Martin, N. Manchester, Washash Co., Ind. 7-19
- D. A. Pike, Smithsburg, Wash. Co., Md. 7-17
- Cornelius Bros., LaFayetteville, Dutch. Co., N. Y. 7-19
- Peter Brickey, Lawrenceburgh, Anderson Co., 11td Ky.
- S. M. Darragh, Chenoa, McLean Co., Ill. 11-17
- Ira D. Alderman, Taylor's Bridge, Samp. Co., N.C. 11-13td
- J. W. Winder, Carrollton, New Orleans, La. 11td
- J. W. Keeran, Bloomington, McLean Co., Ill. 11-21
- *O. H. Townsend, Alamo, Kal. Co., Mich. 11td
- *F. S. McClelland, New Brighton, Beav. Co., Pa. 11-13
- *Elias Cole, Ashley, Delaware Co., O. 11-1td
- *Haines Bros., Moons, Fayette Co., O. 11-23

TRY THE BELLINZONA ITALIANS, and see for yourself that they are **THE BEST.** Warranted queens in May, \$1.25; June, \$1.10; July and after, \$1.00; six for \$5.00. Bees at reduced rates. Send for descriptive circular. Satisfaction guaranteed. CHAS. D. DU'VALL, 9tdb Spenceville, Mont. Co., Md.

DADANT'S FOUNDATION FACTORY. Wholesale and retail. See advertisement in another column. 3tdtd

GERMAN BROWN BEES,

75 cts. a pound; Queens to go with the same, 35 cts.; ½ pound, 50 cts. Will be ready to ship the 28th of May. Safe arrival guaranteed. Address

THOMAS GEDYE, LA SALLE, LA SALLE CO., ILL.

1885 ITALIAN QUEENS 1885

Untested Queens in March and April..... \$1.25
Afterward..... 1.00

5tdb J. S. TABLOCK, LULING, CALDWELL CO., TEXAS.

MUTH'S HONEY-EXTRACTOR, SQUARE GLASS HONEY-JARS, TIN BUCKETS, BEE-HIVES, HONEY-SECTIONS, &c., &c.

Apply to CHAS. F. MUTH, CINCINNATI, O.
P. S.—Send 10-cent stamp for "Practical Hints to Bee-Keepers." 1tdb

1879. ITALIAN QUEENS. 1885.

For Italian queens in their purity, and that can not be excelled; Comb Foundation and supplies generally, send for circular. Untested queens, \$1.10 per dozen. T. S. HALL, 7tdb Kirby's Creek, Jackson Co., Ala.

ROOT'S CHAFF HIVES Still lead, and we furnish them at Hard-Pan Prices.

Our 5th Annual Circular, containing a full line of Bee-Keepers' goods, will be sent free on application. 5tdb C. C. & J. P. WATTS, MURRAY, CLEARFIELD CO., PA.

Hive Manufacturers.

Who agree to make such hives, and at the prices named, as those described on our circular.

- A. I. Root, Medina, Ohio.
- P. L. Viallon, Bayou Goula, Iberville Par., La. 7td
- C. W. Costellow, Waterboro, York Co., Me. 21-19
- Kennedy & Leahy, Higginsville, Lafayette Co., Mo. 9td
- F. A. Snell, Milledgeville, Carroll Co., Ill. 1-13
- E. T. Lewis, Toledo, Lucas Co., Ohio. 3-1
- H. F. Moeller, cor. 5th st. and Western Ave., Davenport, Ia. 3-1
- C. P. Bish, Petrolia, Butler Co., Pa. 3-13
- Milo S. West, Box 302, Flint, Genesee Co., Mich. 3-13
- E. Kretschmer, Coburg, Montgomery Co., Ia. 11td

Foundation-Mills Lower.

Until further notice, prices will be as follows: 4-inch mill, \$10.00; 6-inch mill, \$13.50; 10-in. mill, \$20.00; 12-inch mill, \$30.00; 14-inch mill, \$40.00.

A. I. Root, Medina, O.

EXCHANGE DEPARTMENT.

Notices will be inserted under this head at one-half our usual rates. All ads. intended for this department must not exceed 5 lines, and you must say you want your ad. in this department, or we will not be responsible for any error.

WANTED.—To trade L. hives complete, for comb honey, sections full of fdn., or chaff hives, for bees or fdn. mill. 10d
JOHN C. STEWART, Hopkins, Nodaway Co., Mo.

WANTED.—From 300 to 500 lbs. extracted honey in exchange for Pure Italian Queens. Will allow 8 cents for white honey, and 6 cts. for clover and honey-dew mixed. Queens at \$1.00 in June and July. Satisfaction guaranteed. L. L. TRIEM,
911d La Porte City, Black Hawk Co., Iowa.

WANTED.—To exchange Leconte pear-trees for dollar queens. Queens to be delivered at any time during the season, and trees will be delivered after the first killing frost. Leconte trees, 4 to 6 ft., 35c. per express; 1½ to 2½ ft., by mail, postpaid, 3 for \$1.00. W. H. LAWS, Box 37, Fort Smith, Ark.

WANTED.—To exchange 25 Simplicity bee-hives, new and painted, for bees by the pound, ½ lb., or colony. H. KINGSBURY,
Lockport, Niagara Co., N. Y.

WANTED.—To exchange 2 knitting-machines (one Lamb, one Kimble) bee-hives that have been used some; 50c and \$1.00 apiece, F. O. B., for beeswax, or offers foundation, 44 to 50c per lb., for cash or wax; wax worked on press on shares or for cash. A. J. NORRIS,
11-12d Cedar Falls, Black Hawk Co., Iowa.

WANTED.—To exchange hives made up or in the flat, for bees, queens, and new honey. Send for price list free. J. R. LINDLEY,
Georgetown, Ver. Co., Ill.

WANTED.—To exchange one second-hand 50-inch painted bicycle for four colonies of bees. Italians preferred. Send for particulars. C. L. HILL, Dennison, Tus. Co., Ohio.

WANTED.—To exchange for bees by the pound or otherwise, 50 lbs. nice comb foundation, L. size, at 40 cts. per lb.; also 100 Simplicity hives and frames, some of them used a very little, and some still in the flat. All at low rates. Speak promptly. D. G. EDMISTON, Adrian, Lenawee Co., Mich.

HILL-SIDE APIARY.

QUEENS, & BEES BY THE POUND, NUCLEUS, OR FULL COLONIES.

Send for circular to

W. B. COGGESHALL, Supt.,

11d HILL-SIDE APIARY, SUMMIT, UNION CO., NEW JERSEY.

THE IDEAL VEIL.

Glass front; light, durable, convenient, practicable. Other veils endanger your sight. Will please you, or refund money. Is this fair enough? Only 65 c., postpaid. Address

KANAWHA-VALLEY APIARY.

11d JNO. C. CAPEHART, St. Albans, W. Va.

TESTED QUEENS. \$2.00. Untested, \$1.00. 4-frame nuclei, \$3.50 and \$4.50. Mississippi wax-extractor, \$3.00. OSCAR F. BLEDSOE, Grenada, Miss. 3td



Rabbits, \$1.00 per pair. Guinea & Norwalk, Ohio. Pigs, \$1.50 per pair. Send two one-cent stamps for circular. Name this paper. 11

JOS. GIBBS,
Breeder and
Dealer in
**FERRETS,
GUINEA PIGS,
AND RABBITS.**

HELP FOR THE SUFFERERS.

The following friends have agreed to furnish bees and queens at low prices, for the benefit of the friends who have lost badly during the past severe winter. In consideration of this, they are allowed to give the following notices once free of charge. As will be noticed, the prices are more or less lower than our regular advertised rates.

After June 1, I will sell a few 2-frame nuclei with tested queen at \$4.00, Simplicity frames, wired and built on fdn. with brood, bees, and honey for the trip. Shipped in light boxes.

CHALON FOWLS, Oberlin, Ohio.

I will supply those who have lost their bees, with a few hybrid queens at 50c each; queen with ½ lb. bees, at \$1.00; bees by the pound at \$1.00. Safe arrival guaranteed.

WM. H. CATHER, Ashville, St. Clair Co., Ala.

If any of the friends who have lost bees the past winter, and wish to try again will write me, I will quote them prices which can not fail to be satisfactory. I have a few colonies with queens from Heddon stock, and three or four hybrid colonies; also pure Italians, about 15 in all, to spare. First come first served.

R. J. FOX, Natick, Middlesex Co., Mass.

During the months of June and July I will sell 2-frame nuclei of Italian and hybrid bees, with untested Italian queen, one frame to contain brood, at \$2.25. Italian bees by the pound, \$1.00. Satisfaction guaranteed.

MRS. A. F. PROPER, Portland, Jay Co., Ind.

After June 1, eight colonies Italian bees, with untested queen, from imported mother, \$5.00 each. Bees, \$1.25 per pound. Untested queens from imported mother, \$1.00 each. After Aug. 1, 80c. Safe arrival guaranteed.

J. W. CRENSHAW,
Versailles, Woodford Co., Ky.

I will sell 25 strong colonies of hybrid bees, with laying queens in 10-frame Root's Simplicity hives, at \$5.00.

M. LAFORREST,
Thibodaux, Lafourche Parish, La.

I have three colonies of 8 frames each for \$4.00 each; they are hybrids, or dark Italians. The reason I have them for sale is, they are not in Simplicity frames, so I shall dispose of them at the above prices. Price cash, one or all, to suit customer; no contagious disease in the State that I know of. Send money by money order to Arcadia, Crawford Co. S. C. FREDERICK, Coal Vale, Craw. Co., Kan.

I will sell, during the month of May and June, bees by the pound, at \$1.00. Two L. frame nuclei and queen, \$2.00. I guarantee safe arrival.

W. R. WHITMAN, Nashville, Davidson Co., Tenn.

I will sell, and deliver at Otsego express office, 50 colonies of bees, mostly Italians, queens reared from pure mothers, 9 straight worker combs (Adair frame) in hives, for \$7.50. Q. frame nucleus in L. or Adair frame, with bees and brood and untested queens, in July. The above queens are reared from imported mother, Root's importation, in light box, for \$3.00. I will do by you as I would wish to be done by.

CALVIN LOVETT,
Otsego, Allegan Co., Mich.

WE WILL SEND,

June 10th to July 15th, untested queens for 90 cts; after, to Sept. 1, 80 cents. Tested queens, \$1.50; choice, \$2.00. Bees, 1 lb., untested queen, \$1.50 now. Postal notes (no stamps) on New Iberia, La.

SAFE ARRIVAL GUARANTEED.

J. W. K. SHAW & CO.,

LOREAUVILLE, Iberia Par., La.

BEES & QUEENS

At greatly reduced prices. After June 15 I will sell 2-frame nuclei, with 2 lbs. of bees in each, no queen, for \$2.25 each. Tested queens, \$1.50 each; warranted queens, \$1.00 each; untested queens, 75 cts. each, either Syrian or Italian. F. E. GOOD, SPARTA, TENN.

DADANT'S FOUNDATION

is asserted by hundreds of practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sag, most regular in color, evenest, and neatest of any that is made.

It is kept for sale by Messrs. A. H. Newman, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; Dougherty & McKee, Indianapolis, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Ezra Baer, Dixon, Lee Co., Ill.; E. S. Armstrong, Jerseyville, Ill.; H. Drum, Adelphi, O.; Arthur Todd, Germantown, Philadelphia, Pa.; E. Kretschmer, Coburg, Iowa; E. F. Smith, Smyrna, N. Y.; C. T. Dale, Mortonsville, Ky.; Clark Johnson & Son, Covington, Ky.; King, Aspinwall & Co., 16 Thomas St., New York City; C. A. Graves, Birmingham, O.; M. J. Dickason, Hiawatha, Kan., and numerous other dealers.

Write for samples free, and price list of supplies, accompanied with 150 Complimentary and unaltered testimonials, from as many bee-keepers, in 1883. We guarantee every inch of our foundation equal to sample in every respect.

30tdfd **CHAS. DADANT & SON,**
Hamilton, Hancock Co., Illinois.

DIXON & DILLON,

Parrish, Franklin Co., Illinois.

Manufacturers of and Dealers in all kinds of

APIARIAN SUPPLIES,

at the lowest prices. Also pure **ITALIAN BEES** and **QUEENS**. No other bees kept in our yards. For further information, send for price list. 6-13db

I HAVE THEM. Pure Italian Queens, raised from the choicest stock, ready to mail now. Untested queens, \$1.00. Tested queens, 2.00. Send me your order, and send for my circular of queens and bees. J. P. CONNELL.
9-20db Hillsboro, Hill Co., Texas.

I WILL SELL

Chaff hives all complete, with lower frames, for \$2.50; in flat, \$1.50; 2-story Simplicity, complete, \$1.25; in flat, 90c.

Comb Foundation, made from pure refined wax, 45c per lb. for heavy; 55 for light. Other supplies. Send for price list. A. F. STAUFFER,
7-12db Sterling, Whiteside Co., Ill.

ALBINO and ITALIAN QUEENS NOW READY.

Tested queens of either race, before July 15 \$2 00
After July 15 1 50
Untested queens before July 1 1 25
After July 1 1 00

Satisfaction guaranteed. For price of full colonies, send for circular to **J. F. HIXON,**
11-12db Lock 53, Wash. Co., Md.

FOR SALE—In fine condition and good locations, high interest in one or two apiaries of 100 colonies or more each, separately or together. A good opening in a fine bee-country for a first-class man. Good reason for selling. Cheap for cash, or part credit.

BENJ. F. AVERILL,
11-12db Riverton, Bolivar Co., Miss.

Sections, One-Piece, \$4.50 per M.

Samples and price list free.

11d **S. Y. ORR, Morning Sun, Iowa.**

ITALIAN QUEENS and BEES FOR SALE.

Untested, \$1.00 each; tested, \$2.00 each. For full colonies, and bees by pound, or 2 and 3 frame nuclei, write for prices. **JOHN NEBEL & SON,**
7-12db High Hill, Montgomery Co., Mo.

EASTERN QUEENS.

Importing large quantities, we are enabled to quote:

	Spring.	Fall.
Syrian Queens.....	\$9 00.....	\$7 00
Palestine ".....	8 00.....	6 00
Italian ".....	4 00.....	3 00

All guaranteed pure, and reared in native lands, safely delivered by mail. Registered, draft, P. C.

THOS. EDEY & SON,

Steam Joinery Works, St. Neots, England.
10-11 ftd

ITALIAN QUEENS,

\$1.00; \$10.00 per dozen; tested, \$2.00. Safe arrival guaranteed. Circular free.

10tfdb **J. M. KILLOUGH & Co.,**
San Marcos, Hays Co., Tex.

SECTIONS.

Western headquarters for bee-men's supplies. Four-piece sections, and hives of every kind, a specialty. Flory's corner-clamps, etc. Orders for sections and clamps filled in a few hours' notice. Send for sample and prices.

9 20db **M. R. MADARY,**
Box 172. Fresno City, Cal.

BINGHAM SMOKERS AND KNIVES.

BY MAIL, POSTPAID.

Doctor-smoker, wide shield	3 1/2 inch.....	\$2 00
Conqueror-smoker, wide shield	3 ".....	1 75
Large-smoker, wide shield	2 3/4 ".....	1 50
Extra-smoker, wide shield	3 ".....	1 25
Flint-smoker	2 ".....	1 00
Little Wonder-smoker	1 1/2 ".....	65
Bingham & Hetherington Honey Knife, 2 inch	.....	1 15

To sell again, apply for dozen or half dozen rates. Address
BINGHAM & HETHERINGTON, ABRONIA, MICH.
10db

Warranted Italian Queens,

bred with care, from finest imported stock, only \$1.00. Address for price list.
9 **S. F. REED, No. Dorchester, N. H.**

THE CANADIAN BEE JOURNAL.

WEEKLY, \$1.00 PER YEAR.

D. A. Jones & Co., Publishers, Beeton, Ont., Can.

The only bee journal printed in Canada, and containing much valuable and interesting matter each week from the pens of leading Canadian and United States bee-keepers. Sample copy sent free on receipt of address. Printed on nice-toned paper, and in a nice shape for binding, making in one year a volume of 82 pages. 9tfb

W. Z. HUTCHINSON,

ROGERSVILLE, GENESEE CO., MICH.,

Can furnish just as neat, white, smooth, and perfect dovetailed white-poplar sections as there are made. Send for sample and prices. A few full colonies of choice Italians, in Heddon hives, for sale at \$8.00 per colony. Untested Italian queens \$1.00 each. Tested queens, reared last year in the home apiary, \$2.00 each. Beeswax wanted. Make money orders payable at Flint. 9tfdb

FOR SALE.—500 wired combs, 17 1/2 x 9 1/2, new, 11 straight, and perfect, at 15 cts. each.

R. HYDE, Alderly, Dodge Co., Wis.

CALL IN TIME

For colonies of pure Italian bees, with home-bred queen, each, \$7.00; 3, \$6.00; 5 to 10, \$5.50; 15, \$5.00. Foundation for sale. Beeswax wanted. For particulars, call. **E. S. Hildemann, Ashippun, Dodge Co., Wis.**
10-11d

Imported TUNISIAN Queens.

10-11d **FRANK BENTON, MUNICH, GERMANY.**

HONEY COLUMN.

CITY MARKETS.

NEW YORK.—*Honey*.—At present, sales of comb honey are very slow; and owing to the lateness of the season we do not anticipate any change in prices until the new crop commences to arrive. We quote at present prices as follows:

Fancy white clover, 1-lb. sections, per lb.	14@15c
Fair to good " "	12@13c
Fancy " " 2-lb. " "	13@14c
Fair to good " " 2-lb. " "	11@12c
Fancy buckwheat, 1-lb. " "	9@10c
" " 2-lb. " "	7@8c

Ordinary grades not wanted.

Extracted white clover, " "	7@8c
" " buckwheat, " "	6@6½c
<i>Beeswax</i> , prime yellow, " "	32@33c

May 20, 1885. McCALL & HILDRETH BROS.,
34 Hudson Street, corner Duane St., New York.

NEW YORK.—*Honey*.—There is no notable change in the honey market. The demand is light for both comb and extracted, and prices are now ranging very low. We quote:

Fancy white clover, 1-lb. sections, per lb.	14@16c
" " " " 2-lb. " "	12@13c
Lower grades, 1 and 2 lb. " "	10@14c
Buckwheat, 1 and 2 lb. " "	7@9c
California comb, fancy white, " "	10@11c
" " extracted " " in 60-lb. cans; 6½@7c	

Beeswax,—30@32c, according to quality.

THURBER, WHYLAND & CO.,

May 13, 1885. Reade & Hudson Sts., New York.

CINCINNATI.—*Honey*.—There is no new feature in the market. Our regular customers only are buyers at present. There is almost no outside demand, and low figures are no inducement. We quote extracted honey from 5@8c on arrival, and comb honey from 9@12c.

Beeswax is in very good demand, arrivals are plentiful. We quote 24@25c for good yellow on arrival.

CHAS. F. MUTH,

S. E. Cor. Freeman and Central Avenues,
May 10, 1885. Cincinnati, Ohio.

BOSTON.—*Honey*.—We have not any thing of interest to note about the honey market; prices remain the same, and our stock is light.

May 21, 1885. BLAKE & RIPLEY,
57 Chatham St., Boston, Mass.

ST. LOUIS.—*Honey*.—Honey is difficult to sell. Extracted Southern, in bbls., held at 4 to 5c. Choice Northern in kegs, 7@8c. Comb honey nominal, entirely neglected.

Beeswax. No change to note; orders scarce. Quote from 27@30c. W. T. ANDERSON & CO.,
May 21, 1885. 104 N. Third St., St. Louis, Mo.

CHICAGO.—*Honey*.—Comb honey is in light demand at 12@15c for best grades; not much on the market. Extracted dull at 5@7c. *Beeswax*, quiet at 25@27c. R. A. BURNETT,
May 20, 1885. 161 So. Water St., Chicago, Ill.

CLEVELAND.—*Honey*.—There is no change from our last report; sales are very slow, and only the brightest, most attractive lots are moving at 14c for 1-lb., and 12@13c. for 2 lbs. Second qualities stand perfectly still. *Beeswax*, 28@30c. A. C. KENDEL,
May 20, 1885. 115 Ontario St., Cleveland, Ohio.

BEE-KEEPERS,

We are making very nice ONE-PIECE SECTIONS, and are selling them very cheap.

Please send for price list.

J. H. WOODWORTH & CO.,

11d WEST WILLIAMSFIELD, ASHTABULA CO., O.

FRADENBURG'S RABBITS.

I have now 175 ready to fill orders, and shall have more in due season. A. A. FRADENBURG,

Port Washington, O.

FLORIDA.

ORANGE-GROWING, BEE CULTURE, & GARDENING. FOR SALE,

Near Lane Park, Sumter Co., Fla., on the east side of Lake Harris, near shore, and in the famous "Great Lake Region" of the "Orange Belt," about 10 acres of choice first-class pine land, with portion of rich Hammock, right of way to the lake, and advantages for boating, fishing, bathing, travel, and transport. Soil exceptionally good, and admirably suited for orange-growing, or raising early fruits and vegetables. Excellent bee-pasturage surrounding. Location pleasant, healthy, well protected from frost, near two important towns and R. R. stations, and in desirable and rising neighborhood. Good home market for produce, and first-rate facilities for transportation. An excellent opportunity for advantageously uniting the above three industries. Each should pay well singly, and by combining them, early and good income may be secured before the splendid result gained when the grove is brought into bearing. Title perfect. Price moderate. Fuller particulars and terms from

W. D. CAMPBELL, Tavares, Orange Co., Fla.

BEES BY THE POUND.

24 Colonies to draw from.

1 pound \$1.00 | 3 pounds for \$2.50
Nucleus queens cheap. Safe arrival guaranteed. Will exchange for foundation at market prices.

W. R. WHITMAN,

11-12d Nashville, Davidson Co., Tenn.

SAFE Introduction Guaranteed.

Untested Italian queens in June, \$1.38, by return mail. Terms of introduction, subscribe to conditions in our catalogue, which we send free to all applicants. Send for it. You will learn something new. See ad. in May GLEANINGS. S. A. Dyer & Co., POMEROY, OHIO. 11d

ITALIAN BEES AND QUEENS.

FULL COLONIES, NUCLEI, AND BY THE POUND.

11 E. A. GASTMAN, Decatur, Ill.

Look! Look! Look!

PURE ITALIAN BEES AND QUEENS.

	June	July	Aug.
Untested queens	\$1.25	\$1.00	\$1.00
Tested " "	2.51	2.00	2.00
½ lb. of bees (no queen)	1.25	1.00	1.00

All queens impurely mated, replaced.

CHAS. L. JACKEY,

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No Cyprian or Syrian bees ever introduced in this locality. One queen, in June, \$1.25; ½ doz., \$6.00. After July 1, ½ doz., \$5.00. Send for our 48-page illustrated catalogue, describing every thing needed by bee-keepers. Address

J. B. MASON,
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FOR SALE.

I want to sell 100 L. frames of comb, 9½x17½, over one-half worker-comb. \$15.00 will buy them.

11tdb J. W. BRADLEY, COLUMBIA, BOONE CO., MO.

FRANK BOOMHOWER SAYS:

"The 100 hives you made and sent me are first-class in workmanship, and are the most perfect job of the kind I have ever received."

Send for circular. C. W. CRISTELOW,
Waterboro, York Co., Me.

11d



Vol. XIII.

JUNE 1, 1885.

No. 11.

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NOTES FROM THE BANNER APIARY.

NO. 66.

CRITICISMS ON GLEANINGS.

EDITOR GLEANINGS:—We fear that in our criticisms on GLEANINGS we pained you and many of your readers by including religion in the list of subjects that we would have eliminated from GLEANINGS. For fear of doing this we hesitated, when writing our last article, about adding religion to the list, but did not see how we could consistently avoid it. You, of course, feel it your duty to follow the course that you have adopted, and we ought to, and I think we do, have charity enough not to *blame* you, even though the course does not meet with our approval. We sometimes wonder if we are not *too* outspoken. If we have any criticisms to make, we make them openly, "right to a man's face," then he can explain, or defend himself. This may not be the best way to make or to keep friends, but it is "our way." We have very generously been allowed to point out what we consider the faults of GLEANINGS; we now hope to be allowed the pleasure of enumerating its excellences. First, it is always *out on time*. When we are expecting a welcome guest, how much greater the pleasure if he comes when we expect him; and how annoying the disappointment if he does not come *on time*! Second, it always comes *well dressed*. It has a good cover, is well printed upon good paper, and almost entirely free from typographical errors. This may not be so important as that it should contain valuable *ideas*, but it adds greatly to the pleasure of reading it. Perhaps we are oversensitive in regard to typographical

neatness; but a publication that is lacking in this respect arouses in us a feeling that is akin to disgust. Third, it is lively, spicily, wide-awake, and interesting. Even if it does "mix things up," it is seldom *dull*. Some have condemned that "everlasting foot-note" that usually follows each article. There may be objections to it, but, in one respect at least, it is, in *our* opinion, a good thing. If its editor is "up with the times," beginners are less likely to be misled by the errors, fallacies, or wrong conclusions of correspondents.

ARGUMENTS VS. PERSONALITIES.

We were much pleased with your remarks upon page 308 in regard to discourteous criticisms. *Arguments* never hurt; invective and offensive personalities often do. Let us turn over a new leaf, and all join hands in henceforth keeping our apicultural literature free from offensive personalities.

RAISING AS MUCH COMB AS EXTRACTED HONEY.

In reply to Mr. Smith's query upon this subject, we have nothing to add to what we have already written, unless it be to fill the sections with *fdn.* and give no more room in the brood-nest than an ordinary queen *will* keep full of brood.

NAMES AND ADDRESS UPON SHIPPING-CRATES.

We have been informed that most commission merchants are opposed to producers putting their names or addresses upon their packages. Let some of the commission brethren "speak."

8—W. Z. HUTCHINSON, 68—40.

Rogersville, or Genesee Co., Mich.

In regard to the foot-notes: Whenever I think an article is in any way misleading, I expect to correct the tendency to the best of my ability, and I am very well aware that some writers have felt grievously hurt be-

cause of my foot-notes; but for all that, the greatest good to the greatest number, in my opinion, demanded them. Many times a brother gets carried away with some special idea. For the time being his head is not quite "level," as it were. Well, if allowed to go out that way, without anything to modify it, or to tone it down a little, it might be misleading. It is very true, that my judgment may be in error, for it would be strange if it were not, occasionally. In that case it is a misfortune, I admit; but to avoid such misfortunes, I have at my elbow about all the bee-journals published in the world, and all the treatises on bees, of any account, in print. Besides this I have the benefit of the communications that have been sent to me for 15 or 20 years past, in regard to bee culture; and I am self-conceited enough to think that my memory is seldom at fault. My daily prayer is, that God may give me wisdom, and may keep my heart from egotism or prejudice. One or two of the friends have complained because I did not add some comment of some sort at the close of their communications; and if I should drop my time-honored custom, friend H., some of the brethren would not know I was *alive* any more.

SHIPPING BEES.

Putting $\frac{1}{2}$ lb. of Bees and a Queen on Combs where the Bees Died from Honey-dew.

MRS. CHADDOCK TELLS HOW IT WORKS.

THE two half-pound packages and the two queens came through all right. They were put up in *very* good shape; only 25 dead bees in one package, and 80 in the other. They came to the express office on the night of the 20th, and I brought them home yesterday, and turned them loose on some combs of honey-dew and bee-bread where the bees died last winter. By the way, it seems to me that these are about the tongueiest bees that I ever saw; or was it because they were thirsty, that they ran their tongues out so far and so persistently?

We were coming home — Minnie and her papa on the front seat, the bees and myself on the back, when I happened to look over on the end of the packages, and I saw what I thought were hundreds of legs sticking through the screen; then I thought it could not be legs, but wings, and I called Minnie to look, and she said it was tongues. And it was; hundreds of long slim tongues running out, and waving round; and they did this only on the side where the wind struck them. It was too funny to see them running their tongues out to cool them, like a thirsty dog.

This morning Bro. Phillips came up to look at them. He wants to send for some, but is afraid of getting cheated, and I went out to the hives. "Why," said he, "these bees look weak; they can hardly fly." I looked, and, behold, there they were crawling out from the entrance to the edge of the alighting-board, and then rolling off, their bodies swelled up tight as a drum, and stretched out to their longest capacity. I knew in a second what ailed them, but I said, "See what nice large bees they are," and I took off the cover and showed him the cluster; he said they were *very* large indeed.

He went home; and as soon as he was gone I went and looked carefully around the entrance, and there were dozens of those *nice large bees* lying on their backs, kicking their heels up in the air, and I snatched that honey-dew out of the hive, and gave them some fresh honey taken from another hive, and since dinner I have looked at them again, and the swelling has gone down, and they are perfectly sober. The honey-dew was dripping from every pore when I put them in. I tasted it, and it was a little sour; but I thought that, as they could fly out all the time, it would not hurt them. I looked closely, and could see no dead bees near the hive, so I suppose they all recovered.

MAHALA B. CHADDOCK.

Vermont, Ill., May 22, 1885.

Thanks for your report, my friend. My opinion is, that a good strong swarm would have managed those combs, dripping with sour honey-dew honey, all right; but they might have turned around and swarmed out, going off "lickety-split," holding their noses. To prevent such a catastrophe as this, I think it will be better to hold fast to the oft-repeated injunction — put such combs, one at a time, in the center of a good strong colony, till you get them all purified and sweetened. — I think it likely the bees were sticking their tongues out because the day was hot, and they were suffering for want of air. Whenever they do this, shade them from the sun and put them in the wind. They will usually draw their tongues back in a short time. Bees after a trip like this are in poor condition to work up sour honey. Much the better way is to put so small a quantity of bees as half a pound on a comb of healthy brood taken from some other hive. A whole pound of bees will do very well without this comb of brood; but with so small a quantity as that mentioned, it is apt to be "nip and tuck" before a reinforcement of young bees begins to hatch out. I do not believe I should want to recommend only half a pound of bees to start a colony in a hive containing empty combs. Even if they do make a live of it, a frame containing a little brood would give them a great lift, just at a critical point.

REPORTS ENCOURAGING.

HONEY FROM THE WILLOWS, AND THE WAY IT COMES, ETC.

I WENT into winter quarters with 38 stands — 37 in cellar, one outdoors in double hive. All came out alive; lost two queens this spring after they commenced laying, and had brood. They had dysentery some, not very bad. I put an upper story on with Hill's device, and put muslin cloth over the frames, and covered with clover and timothy and chaff, which I got in our feeding-room. May 10th the bees commenced work on the willow. On the morning of the 12th, before the bees commenced to fly, I had one of my best colonies of hybrids on a scale. In the evening they had gained 6 lbs.; 13th, 10 lbs.; 14th, 4 lbs. Then the willow bloom closed. In 1883 the willow flow was good; 1884, none; 1885, as above described. Now, how much honey do you suppose they gathered?

Conrad Grove, Iowa, May 25, 1885. G. J. KLEIN.

Thank you, friend K. Ten pounds a day from the willow, I should say, is very extraordinary. It seems to me that willows must be very plentiful where you are. We were aware that it yields honey largely, but did not know it came in at the rate you mention. If the colony on the scale was an average one, your apiary must have gathered two or three hundred pounds in a single day.

A GOOD REPORT FROM FRIEND BLOOD.

Our home apiary has wintered, as usual, *without loss*. The colonies have been evened up, and the last week all brought in honey freely from willow and maple. I am glad to see that you have a man in charge of your bees who is a *bee-keeper*. In the past ten years we have lost bees twice. One winter they had a short supply of honey; and as we were away from home, about one-fourth starved. At another time we tried to winter several small colonies which should have been united. These two experiments are all we need. Now, how do we winter?

1. *We are very sure that every colony is strong in young and vigorous bees.*

2. *That they have more than enough good honey to last them till spring.*

3. *All upward ventilation is closed, and eight-inch entrance at bottom wide open.*

4. *All hives are double-walled on sides and bottom. One-fourth inch above frames is a one-inch-thick honey-board which the bees wax down.*

I should add, that we do not extract honey, neither do we use the bees in raising queens during the summer. I think we feel as sure of our bees being alive in the spring as we do of our hens. We use the L. and Gallup frames, about an equal number of each. There are more dead bees on bottom-boards of L. hives than of the Gallup. Strong colonies winter well on L. frames; smaller ones on the Gallup.

A. H. K. BLOOD.

Quincy, Mass., May 8, 1885.

NEW HONEY IN ALABAMA.

Some of my hives have upper story chock full. I hived a new swarm on Apr. 2d on empty frames; gave them upper story of sections at once. I have taken 80 full sealed sections from it, and have two frames, 8 boxes each, ready to take out now. How is that for work?

J. J. DAVIDSON.

Grand Bay, Ala., May 2, 1885.

ONLY 4 LOST OUT OF 88.

I am still out of Blasted Hopes. The 88 swarms that I put in winter quarters came out in fine condition, except that two died, and two have dwindled from loss of queen, leaving 84 hives of bees at this date.

JOHN CLINE.

Fayette, Wis., May 15, 1885.

GOOD PROSPECTS.

After my report on page 318, May No., I lost three more colonies of bees by dwindling; two more are pretty weak. The rest are in good condition at present. Some have ten frames with brood, with plenty of bees to gather honey, if any were fit for use. Apple-trees, strawberries, dandelion, and buckeye-trees are yielding honey at present. Buckeye makes fine honey; but honey from the other sources is not good, especially what is gathered from willow, which will be in bloom in a few days. Bees will be in better condition to gather

clover honey when it commences, than they were last year; I am in hopes I shall be able to secure a fine crop of honey the coming June and July.

Linna, Ill., May 14, 1885. J. A. THORNTON, 73-69.

THE MAN WHO WINTERS BEES BY THE HUNDREDS OF COLONIES,

AND WHO WINTERS IN SPITE OF THE HONEY-DEW STORES, ETC.

OUR friends will find a picture of the writer of the following on page 437, Aug., 1883. Learning that he had again wintered his bees without loss, I wrote him a letter, asking him for particulars. Below is his reply:

I can do but little more than acknowledge the receipt of your letter of inquiry, and refer to a detailed description of "How I winter my bees," published in GLEANINGS of Oct. 15, 1883, p. 536. I have made no material change in my manner of wintering.

My bees are in a prosperous condition; the outlook for the season is very promising at present. I have three large apiaries to care for and look after, with at present but one assistant. This I am sure will be a sufficient apology for not trying to add one more to the voluminous list of articles on wintering bees.

Yes, I wintered in spite of honey-dew. Not only had I thousands of pounds of it in my winter stores, but I fed up several colonies upon it after taking away every thing and giving them only empty frames or foundation, and these without exception wintered in perfect condition as well as the very best.

Mr. S. F. Newman, of Norwalk, visited two of my bee-houses in March. A few words from him in regard to that visit might not fail to be interesting.

East Townsend, Ohio.

H. R. BOARDMAN.

Thanks, friend B.; but we should have been glad of a longer letter. Friend Newman, you see you are called on. Please tell us about that visit. I have just turned to the page mentioned above, and read again the description of the way in which friend B. winters his bees. Several things have impressed me by reading it. The first and most important one is, that this matter of wintering is within our control. Where one man winters his bees successfully year after year, while his neighbors lose fearfully during these same years, it is pretty good evidence that it is the man and the management, rather than disease or even a "happen so."

Another point that impresses me is, that these old hands at the business may each of them winter quite successfully, and still be unlike in their methods of management; that is because each one has learned by experience what he can do and what he can not do; and each one may have a peculiar fashion of his own for accomplishing the same result. Friend Boardman, as you notice, winters indoors, and others get along just as successfully by wintering out of doors. May be the stores consumed in the latter case are, however, an objection in the way of expense. Friend B. also favors artificial heat as a means of ventilating his winter repositories. Another point, his hives

are entirely without bottom-boards during winter, being raised up on two 2x4 scantling. Where this great amount of ventilation is allowed, of course the room must be pretty well above the freezing-point. Friend B. prefers 45°; and if he can not keep it up to 45° without artificial heat, the artificial heat is used.

SOMETHING ON THE OTHER SIDE.

FRIEND HIGGINS' REVIEW OF GLEANINGS.

BRO. ROOT:—Mr. Hutchinson's remarks on the "Contents of Bee-Journals" brings me to my feet. I feel I have a grievance also, as well as well-merited praise to bestow, which will be approved by bee-keepers generally. I find fault with "I think" and "don't you think?" and all such generalizing that betrays both ignorance and inexperience. I find fault with those who say, "I am right, but you are wrong," simply because we don't agree. I find fault with that bee-keeper who gets angry, and wants to use the columns of a decent bee-journal to call another hard names, and abuse him just because he chooses to honestly contradict a statement justified by his own experience; and I never will take a bee-journal nor any other paper that has for one of its special features the privilege of its columns to slander the character of others. I object to this mud-throwing by bee-keepers because their views are not swallowed without objection, right or wrong. I object to a bee-journal being restricted exclusively to bees and nothing else. Bee-keepers are not restricted entirely to keeping bees. Our lives are diversified by various occupations in connection with bee-keeping. One has poultry, another gardening, and perhaps some may have carp culture and silkworm raising also.

The driest thing that we of the South can read about in the bee-journals is the quarreling over the hibernation theory, tree-trunk wintering, the pollen theory, and whether Mr. Heddon or some other man should or should not be sainted for discovering it, if the discoverer can ever be designated. We do not care how you winter in the North, so such reading-matter is all paid for and no value received. We don't care any thing about Mr. Heddon's hive, nor any other hive in particular, so long as it has the L. frame and admits of easy manipulation.

For myself, I don't care a cent for what Mr. Hutchinson says about raising comb honey, for I raise only extracted; yet Mr. H.'s articles are of almost priceless value to thousands who do. These things are almost all superfluous to us of the Mississippi Bottom in particular; yet no wail that I know of has gone up from this section, protesting what you ought and ought not to put into your columns. We of the Mississippi Valley have a claim on GLEANINGS, and insist that it ought to be national in its character, and comprehensive in its scope to meet the demands of bee-keepers. We do not want it to be monopolized by any certain class of writers, nor restricted to any certain class of writing, but to be national in character, and comprehensive in its reading-matter. We of the South can not be especially interested in the pollen theory and wintering problem, but we like to know how the world is moving among our bee-friends, and have their experiences in all matters.

Our Homes is objected to by some, and delights

others. Your Juvenile Department can't interest an old bachelor very much, but is a source of great joy to the families of many bee-keepers. So, Bro. Root, on behalf of thousands who hail with gladness each issue of GLEANINGS as it is, go on and keep it as it is; and let those who wish, read only the articles on bees, and they will have more than received their money back, and the rest of us will go on and read the rest. After our editor of GLEANINGS has finished his work in this life, and goes up higher to his reward, there will be the general verdict, "Well done; who can fill his place?"

I began with 75 colonies (68 queens), and have now 132, of which 128 are laying. I have sent, so far, 4½ barrels of new honey to Cincinnati. We have the worst weather in thirty years, cold and wet. I am 28 miles from New Orleans. CHAS. M. HIGGINS.

Hahnville, La., May 20, 1885.

HOW TO MAKE A HOME-MADE WATER-PROOF.

WORKING IN THE RAIN, AND NOT GETTING WET.

A FEW days ago a warm drizzling rain set in—just what we had been watching and waiting for. When it commenced, all hands were set at work to put out the plants that had been waiting in the greenhouse for such an opportunity. Pretty soon it began to be almost too wet to work, without danger of getting a cold. One of the men suggested that we should get some pieces of oil cloth, make a hole in the center for the head to go through, and that this covering would protect the shoulders and lungs, with a part of the arms, so that it would be safe to go on with the work. I suggested our enamel cloth as being just the thing. In a twinkling, one of the girls in the sewing-room had made a water-proof cloak. You want a piece two yards long, costing 40 cents. Make a hole in the center, something like a button-hole; hem it all around, and then put on a button, so as to button up close to the chin. Round off the corners so they will not be dangling around in the way, and put on a string so as to draw the loose folds back under the arms. If you are to be out long, roll up your sleeves so they will not feel disagreeable, and you are ready to set out plants, take care of bees, or do whatever you choose.

The boy who was dropping plants thought he ought to have one, so a smaller one was made for him. With his trowsers rolled up, and barefooted, he stayed out through every shower, without any inconvenience.

A great many times when work is pressing, we are tempted to stay out and do it, and thereby we sometimes get a cold that throws us out of days or weeks of time, in the most critical part of the season. With such a cloak or roundabout we have saved it all, to say nothing of possibly saving valuable lives. If you do not succeed in making one to your satisfaction, from directions given above, we can send you a sample of one fixed as we have it, for 75 cts.; 10, \$6.00; 100, \$50.00. If wanted by mail, add 25 cts. extra for postage. Children's size will be 50 cts.; 10, \$4.50; 100, \$42.50. If wanted by mail, the postage will be 20 cts. extra.

SOME NOTES AND COMMENTS.

FRIEND W. F. CLARKE TALKS ABOUT HIBERNATION, BEE-JOURNALS, AND SOME OTHER THINGS.

THE last two numbers of GLEANINGS have been very suggestive of topics on which to write; and to discuss them fully it would require more time than I have to spare, and more space than I dare venture to ask. But there are two or three matters on which I must beg leave to offer a few words.

CHILLED BEES.

Friend Doolittle has given us an interesting account of some experiments, as to the degree of cold bees will bear, and the length of time they can stand it. But I just wish to say, that chilled bees are not hibernating bees, or bees to which I have applied the term hibernation. A chilled bee, like a shivering human being, is in a condition of discomfort and uneasiness. The state of hibernation, semi-hibernation, quiescence, torpor, semi-torpor, or whatever term may be applied to the well-known condition in which bees remain closely clustered, exercising their functions but little, and eating the *minimum* of food, is a state of comfort, contentment, and rest. A chilled bee is on the road to death; its progress thither may be arrested by timely warmth; but if not so arrested, the result will be fatal. A hibernating, torpid, dormant, or whatever-you-like-to-call-it bee, is in the path of life. The first effect of too much cold on a bee is to rouse it to unusual activity; the second, to induce over-eating; the third, to make it give up, get numb, and gradually succumb. Like a human being overcome by extreme cold, a chilled bee becomes motionless and insensible. It may be roused out of the first stages, and restored by warmth; but if let alone, it will infallibly die.

THE JONES FRAME.

On page 264, where a cut is given of this frame, the idea is conveyed that it is the one generally in use among Canadian bee-keepers. This is incorrect. Owing to Mr. Jones's well-earned fame and influence, his frame is extensively used; but many of our best bee-keepers prefer the Langstroth, or a modification of it. Mr. Hull, of Woodstock, perhaps our largest producer of comb honey, uses a frame rather larger every way than the Langstroth, but preserving very nearly its proportions. Most of our hive-makers manufacture the Simplicity hive, and it is in wide demand. I think Messrs. S. Cornell and Allen Pringle use the Quinby frame, or a modification of it. Dr. Thom, I understand, is experimenting with the Jones frame, turned the other way about. A few Canadian bee-keepers use the American and Gallup frames. In fact, we have a great variety of frames in use—the more's the pity. Beginners in bee culture here, as elsewhere, are prolific of ideas in regard to hives, and aspire to be inventors before they have won their spurs as apirists. I think I am correct in saying that the Jones and Langstroth are the two prevailing styles of frames; those who produce extracted honey preferring the Jones, and those who go into comb honey, using the Langstroth.

PROFESSOR COOK.

Our good friend Cook shows an excellent spirit under what he meekly calls the "just flagellation." I gave him about his *ex-cathedra* pronunciamento concerning hibernation; but I am surprised to find him falling into the same errors as unscientific

writers, in overlooking the fact that hibernation is a thing of degrees. This fact is recognized by Kirby, the great authority whom he quotes, who says: "Every gradation is to be met with between ordinary sleep, the imperfect or abnormal hibernation of some animals, and the profound hibernation of others, in which all the functions of life are suspended." I have never claimed that the hibernation of the bee is "profound, but only imperfect and abnormal." Assuredly, in the case of the bee, "all the functions of life are not suspended," but it can not be denied that *some* of them are when the close, compact winter cluster is formed which we all know to be so desirable. I believe that bees cluster in this way when they have satisfied their appetites for the time being, and unclasp when the demands of hunger make it necessary for them to eat again. I think they feed only at certain intervals, when in a normal wintering condition. How long or how short those intervals are I do not pretend to know; but I fancy they are decided to some extent by the weather, and that bees take the opportunity of eating when a mild spell comes. This is one reason why I prefer outdoor wintering, instead of the uniform temperature maintained in a cellar or bee-house. By the way, notwithstanding his expressed and no doubt sincere desire not to be dogmatic, Professor Cook is, as you say, a little too much inclined to get into the rut of positive assertion. Thus, in quoting Kirby he makes the great naturalist say, "Bees do not hibernate." But on turning up the reference to *Kneip, Brit.*, I find that what he really says is, "Hive-bees probably do not hibernate." Prof. Cook no doubt quoted from memory; but it would seem that his recollection, like his utterances, is apt to run into a positive mold. He is right in saying that reporters at conventions, in their study of brevity, are apt to give our expressions "too sharp a twang." But in my "just flagellation" I quoted his own deliberately penned language in the *A. B. J.*, where he said, in reply to a query, "Bees never hibernate." His quotation of Kirby, too, was penned by himself. "*Litera scripta manet*"—"What is written, stands."

THE MIX IN GLEANINGS.

Has not the editor given himself away a little in his reply to friend Hutchinson on page 309? I think so. He says, "GLEANINGS is not devoted *entirely* and exclusively to bees." We all know that. But the title-page on the cover says, "Devoted to bees and honey." That motto around the flying bee is no part of the title of GLEANINGS. It rather indicates the spirit in which the busy little insect makes its flights; and sad experience compels me to say that it has not a feeling of good will to men universally, for it stings me on every favorable and unfavorable opportunity. I think the Scotch motto, "*Nemo me impune lacessit*"—"No man meddles with me with impunity"—would be more applicable. I must say I rather sympathize with friends Smith and Hutchinson in their criticism on the varied contents of GLEANINGS; but if you are bent on making your journal a miscellany, would it not be better to amend the title on the cover in some such way as this: "Devoted to Bees, Honey, etc.?"

THE POLLEN THEORY.

Friend Heddon has sung his triumphant psalm in GLEANINGS; but there is one difficulty, at least, to be surmounted before we can all join in the chorus, "See, the conquering hero comes!" It is the "dry

feces." What is that brown and black powder which collects beneath the frames when bees winter well? Following Quinby, I have strongly maintained that it is "dry feces." Mr. Heddon quotes Prof. Cook as positively denying this. Well, then, what is it? If not "dry feces" it must be rejected pollen and other waste matter dropped by the bees when they are feeding. If it is "dry feces," we have proof that bees can safely eat pollen during winter confinement. If it is rejected stuff spit out by the bees while feeding, it shows that, in a right condition, they will not eat pollen to their injury during winter confinement. Either view is fatal to the pollen theory, and we are forced to the conclusion that, after all, safe wintering is a matter of temperature. If that is right, bees can either eat pollen with impunity, and pass it safely, or they will not eat it at all, so that we need give ourselves no trouble to keep pollen out of the hive in winter. Fix them so that they can hibernate, quiesce, "keep asy," as Paddy would say, or whatever you like to call it, and pollen in the hive will do no harm. I may add, that I have sent Mr. Heddon a sample of "dry feces," received from Mr. Corneli, also another taken out of one of my own hives, requesting that he will get Prof. Cook to analyze them with the same care that he has done the wet feces, and I am waiting anxiously for the report. If it does not knock the pollen theory into a cocked hat, "call me a Dutchman."

WM. F. CLARKE.

Speside, ∞ Ont., May 7, 1885.

Friend Clarke, I thank you for your kind criticism, and I for one feel guilty; but what *my* conscience accuses me of is this: In letting a good deal have place in GLEANINGS that not only has little or no reference to bees, but matter that occupies space that is of no particular benefit to any one. May God give me grace to do better, and to set a better example; and to commence at once I will cut this short right here.

HOW TO MAKE A HONEY-TANK.

A TANK ALL OF WOOD TO HOLD OVER 1000 LBS., AND NOT TO COST OVER \$7.00.

ON page 310 I see that Mr. Ross, of Texas, wants to know how to make a honey-tank. I have used one made of wood for two years, and am well pleased with it. It is about 6 ft. long, 2 ft. wide, and 18 in. deep, with a V-shaped bottom, and holds 1000 or 1200 lbs. of honey. It is made of 1-inch and 1½-inch pine lumber. The end-boards are grooved into the bottom and sides so that the latter extend beyond the former about 3 in. The other joints (i. e., where the boards are spliced) are grooved and tongued together, and all the joints are cemented together with white lead and canvas. It is put together with screws—not nails. It is painted on the outside, and coated on the inside with paraffine, which is, I think, much cheaper than tin, and just as good, so far as I see. Six small iron rods go across the tank, to prevent it from spreading when filled with honey. I place the extractor and uncapping-box on the tank, have a hole about a foot square in the cover, in which is placed a piece of cheese-cloth for a strainer. The honey from the extractor and uncapping-box flows through this strainer into the tank, and is drawn off at the bottom by means of a honey-gate placed in

one end, whenever a customer calls for it. The tank is mounted on legs, so that the honey-gate is about 18 in. from the floor of the honey-house. Of course, I have a stool to stand on while extracting. My tank is not stationary. I had a carpenter make it to order. It cost me something over \$7.00.

Bangor, ∞ Iowa, May 6, 1885. M. A. JACKSON.

Thanks, friend J. No doubt the above arrangement will answer very well. There is one reason, however, why I should not like a wooden tank coated with paraffine, as well as one lined with tin. Any utensil in which honey is placed is apt to get a sort of strong odor in time, and nothing removes this so effectually as boiling water. Tin can be cleansed with boiling water without trouble; but boiling water would dissolve your paraffine, and make mischief. If you have had it in use some time, however, and have not noticed any slight taint given to the honey, after it has stood in it for some time, perhaps my fears may be groundless.

A BEE OR A BUG—WHICH IS IT?

PROF. COOK TELLS US SOMETHING ABOUT AN INSECT THAT OFTEN FREQUENTS OUR BEE-HIVES.

I SEND you by this mail a specimen of a bug or bee, and I should say both; but I never heard of a bug-bee. I got hold of one of your ABC books, and bought 11 swarms last fall. I have 5 swarms now. Do you think I read my ABC's well? The insects I send I found one in one of the hives, and the others on the backs of worker-bees. They are very active, and jump on the bee's back, and fasten their sharp pincers in the bee's neck, and the bee can not fly with him, but runs every way to get him off; but he sticks in spite of all. I did not wait to see how soon he would kill the bee, but took them off. I never heard or saw anything like it before. It may be because I never kept bees before. They have no sting, but the slickest pair of pincer jaws I ever saw. With the bug-bees, I inclose a few dead young bees. The old bees drag them out and they appear to have the St. Anthony's dance, and are deformed. Do you think it is by being chilled, or is it some insect at work at them? The bug-bees eat sweet like a bee. What are the specimens, and cause of the deformed young bees, and what gives them the St. Anthony's dance?

Wakeman, Ohio, Apr. 20, 1885. R. DERBY, JR.

In submitting the above letter to Prof. Cook I suggested that perhaps these little bees were the same that bore in the pithy stalks of the thistle and mullein.

PROF. COOK'S ANSWER.

The little black slim bees are species of *Andrena*. They have a tremendous sugar-tooth, like almost all bees, and, like some higher animals, prefer to steal their living rather than to procure it by honest toil. From their small size, quick motions, and hard crust, which latter serves them as a natural shield, they are able to brave the anger of the hive-bees. To see these little fierce bees pounce upon our large honey-bees, reminds us at once of our sparrows and blackbirds as they worry our large hawks. These little bees, like our honey-bees, are hardly robbers from choice; for as soon as the flowers come they mend their ways and gather their own stores.

You are not correct in supposing that these bees nest in hollow stalks, though very near relatives do.

These dig tunnels in the earth, where they deposit stores and lay their eggs, and where their young are reared. Sometimes their tunnels are sunk some inches in our hard walks and roads.

These bees annoy the honey-bees some in early spring, but I do not think need cause any alarm.

A. J. Cook.

Agricultural College, Mich., Apr. 24, 1885.

As friend Cook does not mention the bees that seem to have the St. Vitus dance, I would suggest that it is the same malady described in the A B C book, at the close of the article on the diseases of bees. Of course, the little bee described has nothing to do with the diseased bees.

FIVE FRAMES IN A HIVE.

WIDE FRAMES NOT YET THINGS OF THE PAST, ACCORDING TO FRIEND DOOLITTLE.

ON page 247 of GLEANINGS for April 1st, Mr. E. W. James asks what I do with the remainder of the space in the hive where I use but five or six frames, when a new swarm is put into a hive. In all of my hives I use but 9 Gallup frames, although the standard Gallup hive is made to hold 12 frames. Some years ago I ascertained that queens as they would average would not give me brood amounting to more than 8 frames full, so I gave 9 frames, as the amount of one frame was needed for the pollen and a little honey, before the sections were put on. To bring the standard hive down to 9 frames, I used 3 division-boards, making each one take the place of a frame; and when new hives were made they were made for only 9 frames, so that at present writing I have few of the standard hives on hand. In this way I was enabled to secure a much larger yield of comb honey than I ever could with the 12-frame hive, as, when such was used, I always found the 3 outside frames filled with honey at the beginning of the honey harvest, which gave a tendency toward crowding the brood-nest with honey, rather than an immediate entering of the sections. After a while I ascertained, by many careful examinations, that the queen of a prime swarm would, on an average, keep only from five to six frames filled with brood for the first six weeks after being hived, after which the brood-nest was gradually reduced to less size until there was no brood on the approach of winter. After having ascertained this I gave each new swarm but five or six frames, and secured results from new swarms never obtained before; but instead of using division-boards, as friend Root supposes, I use wide frames of sections on each side of the brood; for by so doing I get the surplus honey (which I used to get in the frames) placed in sections, which is just where I want it. Those who have decided wide frames are not the things to use will never fully realize the possibilities of bee-keeping, in my opinion.

The great secret of a large yield of comb honey is getting the sections as near the brood, both at sides and top, as possible, and I know of no arrangement that meets these requirements so well as wide frames. After sending off and getting nearly all the case arrangements mentioned in our bee-papers, so as to make a careful comparison of them with wide frames, to-day finds me more in favor of wide frames than ever, and I do not believe, taking the year through, that the case system has any advan-

tage over the other, regarding the saving of labor, which is the main plea used in their favor. Before throwing away wide frames, I advise all to read the short article from F. J. Farr, found on page 313.

WINTERING.

On page 246 friend Root thinks that bees in chaff hives will not die if fed heavily on sugar syrup, and desires the particulars if any have so lost. I have given the particulars in GLEANINGS and A. B. J. regarding one so lost, so I will not go over the grounds again, but will simply say that, upon now going over my bees after a loss of one-fourth, with another fourth very weak, I can see no difference in favor of sugar syrup over honey. The difference in favor of chaff hives is quite marked, yet they are not wholly exempt from loss, by any means. On page 303 I find that it is thought that the "Linswik" sisters' success is owing to the extra care they gave their bees. Let us see: A friend calling at my house several years ago remarked to myself and Mr. Betsinger, who chanced to be here, that there was no need of losing bees if the proper care was given them when preparing for winter, for he had never lost any, and did not believe he ever should. B. remarked that his turn would come yet, and, sure enough, to-day finds him with 20 weak colonies left out of 70 last fall, despite the extra care he says he gave them. Another friend who does not claim to use any great care, and who brimstoned some 20 colonies last fall, because he had more than he wished, came out of this winter with every one alive, he being the only one in this section who has not lost heavily; so I say that we—I don't know any thing about what makes our bees die. Last fall I packed with extra care two colonies sitting side by side, each having the same number of combs, of the same age, queens of the same age, bees and stores equal, and all as near alike as two peas, yet one died before March 20th, while the other is the best colony I have in the yard to-day. Now, friend Root, when you or any one else will tell me why the one died and the other lived, then I will tell you how to winter bees; and until some one can do this, I shall be excusable for saying I don't know.

G. M. DOOLITTLE.

Borodino, O. N. Y., May, 1885.

Just one word in regard to what you say about sugar syrup compared with honey, friend D. It was but a few days ago that I decided, while running over my letters for copy, that there was no further need of publishing letters showing the great advantage of winter stores of *sugar syrup* over winter stores of honey. Our bee-journals have given proof again and again, year after year, until I should say the matter is settled. It is true, there are those who write that they have not noticed any thing in favor of sugar syrup over good honey; but these letters do not account for very much while the fact remains that no one of late years claims that honey is *better* than sugar stores. Once more: The large stores of honey-dew have, without question, been the death of thousands of colonies. Had these bees been fed on sugar syrup instead of honey-dew, they would have been saved. Almost all the bee-men in Medina County have lost terribly. Their bees had such stores as they gathered; ours, such as we fed them. They lost fearfully, and their bees are dying of spring dwindling, even up to this present time, dur-

ing the latter part of May. There has been nothing like spring dwindling in our apiary. We fed barrels and barrels of sugar; they didn't.

BEES IN CUBA.

HONEY FROM THE BANANA, ETC.

IN GLEANINGS of Dec. 1 I find an inquiry as to why bee-keeping in the tropics is not a success while bananas are grown largely. In this locality, and in a radius of two or three miles, there are many thousands of banana and palm trees, each of which blossoms a "racemos," or cluster of blossoms, which average 3½ ft. in length, with a diameter of 2 ft. across the shoulder—a solid mass of creamy-white blossoms, upon which the bees, when other stores are scarce, actually swarm. They are never neglected, even when the campana is in bloom. There is also a tree here called "digame," which is a mass of white blossoms for two or three weeks, at this time of the year, and I should say a very ordinary bee-keeper could make a success, in this province at least. The others I know nothing of but from hearsay, which reports honey everywhere and all the time.

We are situated about six miles from the town of Principe, which is connected by a railroad of about 45 miles with Nuevitas, a port on the north coast, and one of the finest harbors in the island. Vessels sail from there to New York, and make the trip in from 8 to 14 days. A good steamer could do it in 4.

The climate is most lovely, the thermometer averaging about 80° in the day to 76° at night. I never saw it below 70° the coolest night I have experienced; but that was in June, when one would suppose it to be the warmest of the year.

The people are the most hospitable I ever met or heard of. When you are introduced to a Cuban at his home he says, "My house is yours; do what you please with it;" and I verily believe, that if you could pick it up and carry it off on your back, the Cuban would climb a tree and rest satisfied that he had carried out his hospitality in the sense it is understood by his people. All of the women are beautiful, and as amiable as lovely; in fact, I am yet to see a woman or child with any other disposition than that of a smiling and pleasant one.

The soil is the richest on earth; and if the Spanish government carries out the spirit of the letter of their treaty with the United States, this island will be as near a paradise for the producer as can be found on this earth. By irrigation, plants can grow the year round. As it is, two corn crops are grown on the same field in one season, extending from April to December; but with the agricultural machinery of the United States, three could be obtained. The cultivation of the land is done in the most primitive manner. The plow that Moses might have used is still in use here. There is not a four-wheeled wagon in the province. The carts, and all labor of that description, is done by oxen, and I shouldn't be surprised if these oxen were cotemporaries of Moses also. Every thing is done in a very old way; but when an American gets down here they think they have a circus right on hand. The comments upon their ability to carry out any thing except in their way is very amusing, if not flattering. But they find the American is "not the kind of cat" to back out of any thing he undertakes. When we commenced to set up our hives, and talk bees, hon-

ey-slinging, floating the farm in it, and sailing a canoe in it from here to town, they claimed we could not do any thing with our new and improved methods. Now we are showing them about it, and the astonishment of the visitors that come here to view the "circus" makes us smile. Neither Heddon nor Hutchinson would ever get the stomach-ache if some poor fellow started his toes on the edge of his field, as I think there is no limit to the amount of bees that can be kept by one party. One elderly gentleman visited us, who, when younger, kept 1000 of the native hives, with a banana plantation of 40,000. He stated there was money in it. He now owns 66,000 acres in the island, worth \$800,000.

WM. H. WOOD, C. E.

Puerto Principe, Cuba, Dec. 26, 1874.

HONEY-DEW, ONCE MORE.

ARE WE TO HAVE A REPETITION OF THE TROUBLES OF LAST SEASON?

EDITOR GLEANINGS:—Would it not be well to call the attention of bee-keepers to the matter of the bark-lice (*Lecanium*), and the sweet excretion from them? These lice are very common again this season. They are now to be observed as small but rapidly growing scales on the under side of the branches of the trees. We find them here very abundant on white-ash and bitternut, and quite so on basswood, sassafras, and maple. They are now sucking the juices from the tree in such quantities as to greatly injure them. At the same time they excrete the sweet substance which lures the bees. Last week I saw the bees thick about the lice-infested branches. Later, the blossoms of the maples and willows have attracted the bees to more wholesome nectar. It behooves us to keep a close watch, that we may know if the bees are storing or have stored this unsavory sweet, that we may extract it in case it has been gathered to any extent, that it may not be mixed with our white-clover honey. Such precaution would have saved hundreds of dollars to the bee-keepers of the country last year. This nectar secretion, if rightly managed, may and will prove only a benefit. It will stimulate the bees to greater activity, and may be used to feed in early spring, or any time in the summer, if care be taken that it is not stored with honey to be marketed, or with the winter stores.

Mr. Editor, have you never wondered why this secretion was poured forth by these scale lice? I think I have the solution. These scale lice are degraded insects, and so mimic the bark of trees in color, and are made so inconspicuous by their flat form, that they are protected largely from birds and other insects. Thus they gain by their lowly plain habit and mode of life. There is no physical energy required to move about, and so all is used to increase reproduction, and hence the immense prolificness of these bark-lice. But real virtue, even when garbed in plainest dress, can not always remain hidden. That these lice have virtue, is manifested in a phenomenon which has pleased us very greatly the last few days. Some chipping sparrows and Baltimore orioles have been licking up these lice by the thousands. The beautiful golden orioles will take a limb and pass its whole length, and scarce leave a louse. It is very interesting to see them taking their several meals from a favorite

tree right against our house. Now, how poorly these lice are equipped for defense against such a raid as this! Yet they have an armor of no mean value. It is this very habit of nectar secretion. The nectar attracts the bees and wasps, and the bees and wasps frighten off the birds and other insectivorous animals, just as Prof. Tuleare has suggested that the cotton secretes sweet from extra floral glands to attract wasps and ants, which keep off the ruinous caterpillars.

How wonderful the laws that have led to the development of such wonderful methods for safety and preservation! How much more wonderful, and how worthy of reverence, the great Author of these laws!

A. J. COOK.

Agricultural College, Mich., May 16, 1885.

Friend Cook, I am very glad indeed to hear you say that even this matter of honey-dew may, if rightly managed, prove a blessing. It has been a blessing to us in our business of supplying bees by the pound, but I had almost feared to say it, because of being thought selfish. It seems to me it is like all these other things that are unfolding themselves to us day by day as we make progress in studying the works of the all-wise Creator. The very thing that seems a calamity and misfortune may, by the light of science and scientific investigation, be made to minister to our wants. We sell bees by the pound, and start thousands of friends, scattered far and wide, in the industry, and at the same time give them vigorous young bees from late importations from Italy. Now we crowd our work to such an extent that honey-dew and almost every thing else that the bees gather (including the pollen that has been so much talked about recently) is turned into brood and young bees, so that when winter time comes they have comparatively little pollen or honey-dew either. Now, both these substances that ordinarily are but a hindrance in wintering, or even to sell on the market, are turned into bees, and are, therefore, a blessing to us. When we get ready to fix for winter, we have only to fill up with barrels of sugar. Those who raise honey for the market should either choose a locality where honey-dew is not prevalent, or do as you say be very careful not to mix it in with the clover and linden honey so as to injure the sale of this product.

PENNYROYAL AS A HONEY-PLANT.

REPORT FROM NEW ZEALAND.

YOU ask in GLEANINGS, "Does anybody know any thing about pennyroyal as a honey-plant?" Yes, sir; there are acres and acres of it here. In fact, there is not a grass paddock within 20 miles of this, free from it. Some fields you would fancy were nothing else now. When it is in bloom, it is a great plague to farmers, as it is very difficult to eradicate; and once it gets into a district, it spreads with great rapidity. But the honey is the finest, to my taste, of any that I know of—clearer than the best clover honey, and has a beautiful faint mint flavor. It commences to bloom here the middle of January, just as white clover is beginning to fail, and lasts till about the end of February. I don't suppose that it is a large yielder of honey,

as I have got it in but very small quantities each year. I believe it would be a great wrong to introduce the plant to your neighborhood, even if it would yield honey by the bucketful.

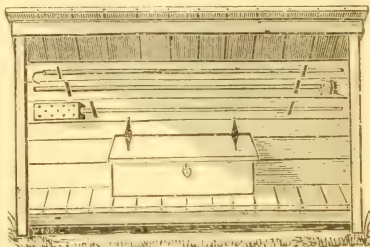
R. McPHERSON.

Otaou, Wairou, South Auckland, N. Z., Jan. 29, 1885.

SWARMING AND SWARMING-BOXES.

ONE WAY IN WHICH PEOPLE FORM DIFFERENT OPINIONS.

IN 1878, friend N. N. Shepard, of Cochran-ton, Pa., wrote us a letter, describing his swarming-box, and we published it with the engraving shown below. From the explanatory letter we got, it entered our heads that the pole was put in the closed end of the swarming-box, and accordingly had our picture made. Afterward friend Shepard said it was not right, and would not do at all, and so we had a picture made different, as at present shown in the A B C book.



REPOSITORY FOR SWARMING IMPLEMENTS.

Well, our neighbor Chas. R. Bingham, of Edinboro, O., made us a call to-day, and remarked that he wanted to say that the old style of swarming-box, with a hole in the end, was one of the best institutions ever gotten up for a bee-keeper; in fact, he declares that the implement is sometimes worth half a year's subscription to GLEANINGS, in taking down a single swarm. He just holds the swarming-box right under the cluster, and shakes a few bees into it. All the rest then leave the limb and go into the box, attracted by the humming of their companions. This humming is caused by the loud rejoicing over what they consider a hive, or may be a hollow tree. Now the point is this: Friend B. understood the letter as I did, and made his swarming-box as I had pictured it, got used to having it that way, and now would not have it any other way. He has learned by many years of practice just how to handle it, until the machine is almost a part of himself, as it were. He has got it at his fingers' ends, as we sometimes express it. Well, my opinion is, that had he started with it the other way, and taken a notion to it, it would have answered the purpose just as well. One farmer gets accustomed to a plow; he knows just what to do with it to obtain the result he desires. After he has had it for years, and if he is one of those people who get into a way of doing a thing, may be he will get

along with a very inferior implement in a way which he could not possibly do with a tool greatly superior, and with which he was unacquainted. And this is what accounts for so many different notions in regard not only to implements for handling bees, but tools for doing almost every thing that needs to be done.

The engraving above shows a little shed arranged to contain all implements for taking down swarms. Where we raise comb honey, as almost all of the friends do nowadays, it seems to me such an arrangement will abundantly pay expense.

THE SIMPLICITY HIVE.

A Testimonial in Regard to Its Advantages.

A NEW AND ALMOST UNEXPLORED FIELD FOR INVENTION.

AS I am one of your A B C students I thought I would give you a remarkable instance of the forethought and reflective powers of my bees. I had a Simplicity, which has presented the appearance of being about to swarm for a week or two. About 10 or 15 steps distant, and in the same row, stood a hive full of comb, but no bees except a few dead ones, they having perished for want of honey during the winter, having been robbed too late last year. Four or five days before this Simplicity swarmed, some bees (now supposed to be from the Simplicity) were noticed cleaning out the vacant hive, carrying out dead bees, etc., from it. Day before yesterday it swarmed, and, after much bell-ringing to settle them, the swarm, which was a very large one, settled on the front side of the vacant hive and gradually went right in upon the alighting-board; and before the whole swarm had gone in, numerous workers were seen carrying in heavy loads of pollen.

They are in there all right, and seem to be well pleased, and are working like Turks. Could we not teach this practice to our bees by preparing hives with frames wired and covered with foundation comb, and set from three to five feet high near an apple-tree?

W. J. FARRISS.

Sparta, c White Co., Tenn., May 16, 1885.

Friend F., it would seem from the above little incident that your strong hive sent a committee of investigation to report in regard to the inducements offered by that empty Simplicity hive. This body of bees, composed, of course, of the oldest and wisest heads among forty or fifty thousand, went home and delivered a report something as follows. I suppose the chairman must have stood up, and, after clearing his throat and wiping his face, made his speech: "I take pleasure, friends, in saying that, after having duly investigated matters, it is, in the humble opinion of your committee, the best thing we can do to occupy said unoccupied hive. The hive is a plain simple box—almost as simple, in fact, as the hollow trees used by our forefathers. One especial quality that recommends it to your committee is, that it has no patent moth-traps, ventilators, or any thing of the sort. We find, by careful examination, that we can get in and out easily, and that the man who made the hive has arranged it so that we can gain

access to every part of the hive; and if a miller should undertake to deposit her eggs anywhere about it, we could, a lot of us, take after her and 'scoot her out on the run.' It is the sense of this committee that we move into that hive as quickly as possible, lest some other enterprising colony discover the unusual advantages it affords. Hurrah for the new home!" Joking aside, friend F., reports like yours have been several times given; and the man who will help us to so manage our bees that they will, at swarming time, go right into hives prepared for them, without any supervision on the part of the owner, will confer a lasting favor on the bee-keepers of the world. I have commented on this matter several times before during the years past. There is one happy thought connected with it, which I have hinted at in the foregoing; namely, the possibility of making a hive so much in accord with the notions or instinct of the bees that they would select it in preference to any inducements that a hollow tree might afford; or, in other words, if a colony of bees were to choose, what kind of a hive would they select of their own free choice? or was it the empty combs that took their fancy? or have they, in fact, any notions in the way of preference as to how their hive and its surroundings shall be arranged?

WINTERING.

Have we or have we Not made Progress in regard to this Matter?

ALSO SOMETHING ABOUT THE POTATO-BOOK.

IDO not know that I should have ordered a copy of your A B C of Potato Culture, had not Brother W. Z. Hutchinson kindly mailed me his to read, as he states on page 335. I certainly can not say less of the work than to indorse all that Bro. H. and Prof. Cook say in praise of this praiseworthy book; though, like Bro. H., I never expect to raise a potato, I knew I ought to have a copy of my own. I felt sure that such reading would benefit me many times 38 cents' worth, let me follow what occupation I might.

I think Bro. Doolittle is decidedly mistaken in thinking that we have gained nothing in our experiments and controversies regarding the pollen theory and wintering problem. He evidently does not understand it as I do. He closes by saying, "What do we know on these points, any way?" I will answer him, by saying that I have always been among the more extensive losers of bees during winter; that I have never at any time before believed that I had the problem settled. I fully believe it now; and if, in the future, I turn my own tables and become one of those who "never lose bees in winter," will Brother D. not willingly admit my claims? Were it not, as you mention, perhaps best to drop this subject just at present, I could explain wherein lies the difference between my failure of the past and proposed successes of the future. All this, however, can be discussed in due time.

JAMES HEDDON.

Dowagiac, Mich., May 18, 1885.

That is the kind of talk, friend Heddon, Just keep cool, and prove your position by wintering bees all right next winter, and the

winter after that, and so on. Such a result will be more convincing than pages of theorizing.

ANOTHER REPORT FROM FRIEND OSBURN.

BEE-KEEPING IN THE TROPICS.

FRIEND ROOT:—In drawing the line of comparison as viewed from the standpoint of the apiarist, do not let us place it too far north or too far south. Do not let us paint it with too much sunshine on one side, and nothing but gloom and disaster on the other. The North to-day stands pre-eminent before the world as a honey-producing country. Its white clover and basswood enjoy positions as honey-producing plants that time will not efface, or the fame of the white sage or bellflower detract one single point from their usefulness. The proud position that apiculture in the United States holds before the world will never be superseded by any other country or set of people, for it is backed up by too much of the spirit of enterprise and never-fail disposition, that has made the U. S. what they are.

In view of these facts (which are stern facts) would it be wise to say that, because the North has cold winters, that prove disastrous to the business in some localities, that the business will be abandoned, and the enterprise which has assumed such grand proportions, declared a failure? We think not; no, the American people *never* fail; rebuffs and setbacks may come; "but, as sure as the sun rises to-morrow morning," they will rebuild the structure on a firmer foundation than before, and "try, try again."

Let us leave the North now, and rest (fully assured that she can take care of herself), and come down to Cuba, and see what the prospects are for success in modern apiculture south of the frost-line. Although we have been here now only 18 months, we feel justified in saying that the country has many resources and advantages, for the honey-producer, that no country north of this that we have ever seen does possess. First among them is the large amount of honey that there is here; and in proof of this let me say, that at this writing we have 555 colonies, all in one apiary (shall make them 600, and all doing well. Second, there is no winter here. But you will ask me, what about our dearth of honey, and of our disaster last year; i. e., the loss of so many colonies? To which I will say, that our great loss was only the result of too much increase, and ignorance, on our part, of what the honey resources of the country were at that time of the year. If you will remember, last year we increased from 34 to 520. Any apiarist will readily understand that, after such an increase, that pretty much all the colonies were weak when the flow from the flowers stopped. But now the situation is very different. Instead of all weak ones there are 400 colonies with their top stories on, and full from top to bottom of bees and honey, and we have two months yet to go before the dearth comes, for the other 200 to breed and store moderately along, until the flow ceases altogether. But suppose those that have not honey now to carry them through the dearth do not get it, we have a large surplus in the 400 to fall back on, and there will be no need of letting any of the weak ones starve.

We are making preparations not so very much

unlike what we would for a northern winter, only this difference: Our colonies can fly every day, and they will be at all times so that we can examine them and know their condition.

There is one source of trouble here in the summer that the Northern apiarist is bothered with but little, and that is the moth. As soon as the colony becomes weak, the miller will go in and deposit her eggs in spite of the Italian or Holy-Land bee. That is, when there is a hive full of combs, and only bees enough to cover three or four, the miller will go in, in spite of them. But after all the disadvantages are summed up, when you take into consideration that there are 8 or 9 months out of the 12 to raise bees and gather honey, it is not so bad a place for the apiarist after all. And then, too, colonies will build up faster here than in the North, for the weather is warmer. It does not take as many bees to keep the brood warm; the queen can lay more eggs, and there are more bees to gather honey. The comfort of the apiarist, while handling bees under these sheets, is ahead of any situation out of doors, for there is no sun nor rain nor dew to annoy him. With hat off, a low pair of shoes (no stockings) a pair of overalls and shirt, with shirt-sleeves rolled up to the elbow, we work with a large degree of comfort.

Now I will tell you about the fleas, for "there is no rose without its thorn." During the dry months they are a pest. While a fellow is flying around he minds but little about them; but when he comes to sit down, then they bite just a little for fun; but they do not keep us from sleeping. We sleep soundly, and the sleep is refreshing. However tired we may be when we go to bed, we get up in the morning feeling as though we could dance a horn-pipe. I have been in the mountain districts of California and Arizona, that were renowned for their health-giving elements; but never have I found a spot where sleep would so perfectly restore the wasted energies of the system, as right here in this portion of Cuba. Is not the reason clear? A narrow strip of land set out in the ocean is fanned by a continual breeze that carries in its very breath health and long life.

A. W. OSBURN.

San Miguel de Jaruco, Cuba, W. I., May 7, 1885.

A NEW DEPARTMENT ASKED FOR IN GLEANINGS.

FRIEND MALLOY GIVES HIMSELF A SEVERE LASHING.

MY last performance in the bee line has almost discouraged me. I will relate the circumstances; and if you never have had a department for *fools*, you may prepare one for my benefit. Two weeks ago my bees numbered 16 hives; to-day the muster is 14, all told—eleven Simplicities and three box hives. Two weeks ago the weather was warm, and the bees were out in force. I threatened every day for a week to examine the hives and see what condition they were in; but being very busy it was put off till Friday evening, when I concluded to look into them. The first hive looked at was in the last stages of starvation—all dead but about a teacupful. I made some syrup as quickly as possible, and sprinkled them all over. I don't think I ever saw any thing that affected me more than their weak efforts to use their tongues and fail in the effort,

and fall from the combs motionless into the mass of dead bees on the bottom of the hive. Before I was aware of it the robbers were on hand, making things lively, I shut up the hive, and left. The next hive (box) was entirely gone; every bee dead. The remainder appear to be all right. Now, where the fool part comes in is this: Some of these hives are two stories, and the top one with ten frames all solidly full of honey. I went into them to see and know they were full, with perhaps a single row of cells running diagonally from top to bottom that the bees have emptied, or perhaps never filled. Now, what ought to be done with a chap who neglects his business so shamefully as this? Suppose Henry Bergh should have a lieutenant here in Missouri, what is to hinder him having me pilloried before the public as a warning to bee-keepers everywhere? I don't know that he could, but I feel that he ought to any way. If putting a horse in a stable and leaving him there until he starved to death is "cruelty to animals," what is it to let a hive of bees starve with a surplus of honey on hand? Of course, I did not know that they were starving, neither did I put myself to any trouble to find out, and consequently have no excuse whatever to offer.

P. A. MALLOY.

Arno, 5 Mo., March 24, 1885.

I am glad to see you so willing to confess your sins, friend M., and may be the lashing will hit a few others besides yourself. It is a shame, I agree with you, for a bee-keeper to starve his bees when he can give them enough in fifteen minutes to last them as many weeks. Just think of it! only a minute a week demanded by each colony; and then in the face of that, to let bees starve to death in the spring of the year! I think Mr. Bergh had better come and settle where bee-men are.

A NOVICE'S EXPERIENCE WITH QUEENS.

A CHAPTER FROM REAL LIFE.

WE began the spring of 1884 with five fair colonies. They built up well, and the first swarm issued May 24; soon came a second and third swarm from the same colony. The other colonies swarmed at intervals until the middle of June. We began to find our young queens missing; they ventured out, but never returned. Then we gave eggs and young larvae, and tried to rear queens. One colony reared a large fine-looking queen, but she had imperfect wings. We discovered her at the entrance of the hive with bees around her, evidently anxious for her flight. Several times we saw her looking over the field. At last we caught her and gave the bees a frame of larvae. For some reason they did not succeed in rearing a queen.

We now had four or five colonies queenless, and began to think of some redress. A friend in Farwell gave us a very nice-looking queen. We sent to A. I. Root for a dollar queen. She came, a small dark-looking one. We succeeded in safely introducing her, and watched her progress. The brood looked patchy, and the bees seemed to die more than from other colonies. We pronounced her "no good," and thought, when spring came, we would supersede her. The spring has come; the bees seem working well, and the queen has improved so

much in appearance that we have changed our opinion.

We had read "Alley on Queen-Rearing," and concluded, with the credulity of a child, that if we could get some Alley queens we should revolutionize things. We sent to Alley for two queens—one a tested queen, the other a warranted selected one, and the *Apiculturist*. The queens came, nice-looking ones, and directions for introducing them. Surely we shall now succeed. We gave the tested queen to a colony that had long been queenless, following directions. She was balled—the bees utterly refused her. We caught the queen, and in our efforts to cage her she flew away. Our dismay can better be imagined than described. We looked here and there. Soon we saw, from the commotion of the bees on the frames outside the hive, that the queen had returned. This time we caged her and tried introducing her in a Pect cage. It was of no use. The bees would have none of her.

We now tried another colony; and when all seemed right we let her run down the frames. We kept a careful watch, and soon found all was not right. In our attempts to secure her this time she was lost indeed—we have always thought she was stung to death. The warranted queen we gave to a nucleus, and she was gladly received. She did well through the fall, and we thought we had a treasure. Her bees suffered severely from disease last winter, but I felt sure, by contracting the brood-chamber, they would build up. A day or two ago I examined the colony, and found bees enough only to cover the palm of the hand. The queen looked dilapidated, discouraged, and forsaken. I immediately gave them two frames, with bees and larvae in all stages, not being able to find full frames of brood with bees just eating through. Undoubtedly it was a bad case of spring dwindling. We await results.

After our loss of the tested Alley queen I sent for another, stating expressly that I wanted it to rear queens from, and would send more money if needed. A queen came that was safely introduced. The fall was mild. The other queens were laying, but this queen seemed idle. I wrote to Mr. Alley, inquiring about her. I received no answer. After a time she did rear a little brood, and we had hopes of a better result in the spring. In February the bees from this colony seemed restless, looking for something they could not find. In a day or two I found the dead queen outside the hive. In April this colony was united to a very weak one that came through with a queen and a corporal's guard.

At present they seem to be doing well. My hopes of rearing queens from the Alley stock are blasted. The *Apiculturist* has ceased to visit me, and I give our experience in the hope that some beginner may realize how unsafe it is to "count the chickens before they are hatched."

M. A. P.

Friend P., it does seem from your little story as if bee-keeping were a precarious business at best. It seems to me that, if we could get down to it, we should find the key to all your troubles to be that you had violated some simple rule in bee culture. For instance, I can not understand how it is that you lost so many queens unless you set your hives too close together. If it should transpire that you set your whole four, together with the new swarm as it came out, all close together in a row (on a long bench, for in-

stance, as we often see them, then it would be very plain and clear why you had such troubles with your queens. I watched carefully while going over your article, to find mention somewhere that you had the A B C book or some other guide to go by. If you have not, your first duty is to get one. Taking a bee-journal will not compensate for the lack of a good treatise on bees. Our bee-journals take it for granted that their readers are posted on the fundamentals before they commence taking a journal. Should we do otherwise, it would be a constant repetition of the rudiments of the science year after year.

SWARMING TIME.

AND THE WAY NATURAL SWARMING GOES MANY TIMES.

I HAD 5 swarms from 6 stands; saved 4, all large ones too. Had rather lively times last Sunday. One new swarm I put in a box gum until my Simplicity hives could get here. Well, I tried to get them into a Simplicity, but go they would not. So on Sunday they came out and settled nicely, and then I got them into the Simplicity hive. About that time a new swarm came from one of my box hives, and settled near the others; and by the time I got them fixed, another came out of another box hive, and settled in two trees. Well, I fixed a Simplicity hive for each, and shook them down, when they both got into one hive. Well, about that time an absconding swarm of my neighbor's came over, and they, too, went into the hive. Now a commotion was caused, and the second swarm began to be troubled, when it and the first one from the box hive I had been trying to get into a Simplicity hive went together; so, instead, as I first thought of having four hives with five swarms, by night I had only one hive of bees. They all went together before sundown, and on Monday, by 9 o'clock, they were flying about as if they all intended to swarm and get righted up. But, no; they (a great many) went back into the old box hives they came from, but left a great many bees in the Simplicity.

At dark I took a look into the hive; and, upon my word, the Simplicity was chock full of bees. Only one frame out of the 14 I could get out. The bees were clustered over the rest and clear to the bottom of the hive. Do you think the swarm from the box hive I was trying to get into a Simplicity hive could have united with the absconding one, and the other two young swarms went back to their parent hive? I can not see how else they could have done. It puzzled me considerably, now I tell you.

Please tell me how long they will begin to store honey in the section boxes after they swarm and are put into a Simplicity hive; and what do you think of my putting a board over the old box hives, with a hole or holes open over those in top of box hive, and placing one of the honey-crates and boxes on, and cover with half-story cover? Think they will make me any box honey that way? I should not like to try to transfer them until I get a little more used to them. I thought I would try that plan this summer any way.

R. J. WATERS.

New Madrid, Mo., May 14, 1885.

Friend W., just such troubles and mixing-up of matters is pretty sure to ensue where

natural swarming is allowed, and this is one reason why I do not like it. I should think the most of it was caused because your hives were full, and your bees had no room to work. Boring holes through the top of the box hive is not quite the thing. It does not afford opening enough, unless there are a great many holes, and they are pretty large. Better pry off the top of the box hive and set your case of sections right over the combs. If the bees have been some time in the box hive, there will be no danger of the combs breaking, even if the whole top is removed entirely. When bees get the swarming mania there is no accounting for what they may do. They will push out and push in everywhere, under all circumstances, and get all in a heap, as yours did, and I do not know how to lay down any very precise rules of management. A better way is to be sure that our bees have plenty of room, and by this means discourage swarming as much as we can.

REPORTS DISCOURAGING.

REPORTS DISCOURAGING FROM IOWA.

I HAVE been looking in GLEANINGS for a report from Iowa, descriptive of our present condition in the "beebusiness," but I found none. I suppose the brethren all feel too bad to "get up and speak in meetin'." The losses of the past winter exceed any thing ever before known in this section. Three-fourths of the bee-keepers lost all. The few that remain are mostly miserable weaklings. Out of 69 I saved 30; only 6 of that number are in good condition; five of the latter are in chaff hives. Every few days we "git a sarm," but after every "sarm" we have one "sarm" less. The severe winter accounts for the trouble. Our winter set in Dec. 2, and continued almost solid until March 26. From Jan. 1st to April 1st we had only 9 days that the mercury stood above freezing at 7 A.M. On 25 days during that time the mercury showed below zero at some time of day. From Jan. 15th to 22d inclusive, from zero to 20 below; from 9th to 13th inclusive, from zero to 18 below. From Feb. 15th to 23d inclusive, from zero to 18 below. Jan. 21st, 7 below zero at 2 P.M. Feb. 12th, 12 below zero at 1 P.M. No supplies wanted. If this doesn't do for Blasted Hopes, I would suggest that you send some one to Greenland to try bee-keeping.

G. B. REPLEGUE.

Udell, Ia., May, 1885.

TURNED OVER THE BEES TO THE WOMEN, AND GONE TO FARMING.

I am not a fit subject for Blasted Hopes, but my hopes are "busted." I went into winter quarters with 52, and I now have 13; those 13 I turned over to a female friend of mine who writes her name Mrs. Snyder, and I have gone to farming. If I should get the bee-fever again, I will let you know by sending for goods. The bee-keepers in this part lost fully 75 per cent.

F. L. SNYDER.

Orion, Wis., Apr. 25, 1885.

The winter of 1879 put me in Blasted Hopes. The past winter puts me there again, along with most of my neighbors. I have a nice lot of combs to use in building up. I shall have my hives full by July.

15—J. P. C. STEDDOM, 15—4.

Webster, Ind., May 11, 1885.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

ADJUSTING THE SPACES SO AS TO PREVENT HAVING
BITS OF COMB BUILT ON THE OUTSIDE
OF THE SECTIONS.

HAVING had some experience in the production of comb honey, I thought I would venture to write you a few items of my past experience. My first experiment was to prevent the bees daubing the sections with bits of comb and propolis, as it seemed to be my greatest trouble. I found, by changing the regular space of $\frac{3}{8}$ inch between the brood-chamber and honey-boxes, or crates, to $\frac{1}{2}$ inch, or just enough space to admit a passage between, I could prevent them from building those little bridges of comb. Next I made my crates deeper, so I had the same space between the top of sections and cover as between the brood-chamber and sections, and I found they would stick their glue, or propolis, around the joints of cover. By following the above plan I can say it gave me entire satisfaction.

JACK ELLIS.

Grantslick, Ky., March 2, 1885.

A HOME-MADE CIRCULAR HAND-POWER SAW.

I have been making a hand-power saw by your directions, which works so well I will tell you about it. To drive it I got an old horse-power wheel, about five feet in diameter, fitted a carriage-axle to the bearing, and bolted the axle to two posts. I turn it by a pin in one of the spokes. When I tried it I did not like the bevel gauge, for the part of the board that had been cut would cramp the saw. Then I made one to slide in place of the cut-off bar, with a strip at the back edge to rest the lumber against. This works splendidly. I also changed my cut-off bar by having the cross-piece double the front one worked by two set-screws so that it can be changed to any angle. This works very nicely too.

Your A B C is the best book I ever saw. I would not be without it for any thing. I have been very successful with bees, and have never lost a colony by wintering. I started with Langstroth hives, but have given them up for Simplicity.

E. S. LEA.

Brighton, Md., March 5, 1885.

PREVENTING BEES FROM SWARMING OUT, WITHOUT A DRONE-TRAP.

When a man has not any frames of brood to give a swarm to make them stay in the hive, why not shove it back on the bottom-board so the bees can just get in and out, or use a Jones drone-guard, or something to keep the queen in the hive until they get a start at work, and then you can give them more room? I suppose you have thought of this before, but I have never seen it in print. I am here staying through the winter, and am trying to help some in bee culture. It is in its infancy here at present, and bees can be bought in old gums for \$2.00 and \$2.50; but I think it will be quite a business after a time. I can not see way it won't. There are orange groves going out every year, from one to 50 acres, and they yield more honey to the single flower than a bee can carry. I shall try it until the last of May, and then go north. I cut a tree 7 feet through last week, and took out a swarm, and they were not going to stay, and I had to clip the queen. I had one of your hives, and shoved it back until the bees could just go in and

out, and then they went to work. Oranges are just blooming here, and I am going to see what I can do with them. I will try for 100 lbs. comb honey.

Silverton, Fla., March 9, 1885. A. W. LINDSLEY.

Friend L., sliding the Simplicity hive back on the bottom-board would answer to graduate the entrance so as to permit workers to pass, but not queens and drones, were the edge of the bottom and the edge of the hive sufficiently accurate; in fact, I have tried the same thing, but the wood is too irregular. We either hindered the bees very much, or else the queen would find a place she could get through. I fear the edges of your hive and bottom-board would have to be of metal, to make a success.

THE X Y Z OF POTATO CULTURE.

You speak in the last GLEANINGS about the A B C of Potato Culture. Now, here in Arkansas we would rather see the X Y Z of Potato Culture. We can raise potatoes, but the trouble is to keep them. They commence rotting about as soon as they get ripe. If your book will tell us how to avoid this, so as to save them for our seed next year, I think it would be a boon to Arkansas.

Bees all lived through the winter that had honey enough, and are generally doing well. We are right in the midst of swarming time.

We have been feasting on strawberries about ten days. Next come huckleberries, and the woods are full of them.

DANIEL HOWARD.

Hot Springs, Ark., May 11, 1885.

Friend H., Mr. Terry considers the matter of keeping potatoes, very thoroughly; and I think his plan will do it, without a doubt, if you keep the temperature as low as he directs. Possibly in your climate it might be a difficult matter. It could be done, however, by means of ice, but that might be more than the potatoes are worth. By adopting the plan he suggests, however, a very little ice would keep a great many potatoes.—If strawberries and huckleberries are plentiful where you are, it seems to me it is the very place I should like to visit.

HOW MUCH CHAFF DO WE PUT OVER OUR BEES?

Just a word of explanation in regard to the amount of chaff you put over your bees in winter. In reply to Mrs. Axtell, you say, "After putting on this sheet of coarse burlap we put about a peck of loose chaff around the edges, making it impossible for the bees to push up, and so get around the ventilators in the cover." Now, is this all the chaff you put over them? My chaff cushions are from 6 to 8 inches thick, and I have thought perhaps it was too much. Have you discarded the Hill device? I use it and the burlap under my burlap cushions.

7—G. E. HILTON, 60—45.

Fremont, Mich., May 18, 1885.

Friend H., I omitted to mention the usual chaff cushions, because I supposed they were understood as a matter of course. Yes, we still continue to use the Hill device, and I think we always shall, so long as we winter as successfully as we have since using it. The Hill device makes a sort of chamber, as it were, above the brood-combs; and the cushions we use of late years are all made of coarse burlap—so coarse, in fact, that the chaff rattles through it to some extent, so you see that air has a

free passage through the loose chaff, and the cluster of bees under the Hill device have always plenty of air, no matter if the entrance is sealed up solid by an icy storm; and yet the loose chaff holds warm air enough so that the bees are never exposed to a chilling current of air.

TRIALS OF A BEGINNER IN BEE CULTURE.

I have been a silent observer and close reader of *GLEANINGS* for about a year, and have noted with much interest the various experiences of different individuals, which has tempted me to throw in my mite and make my first report, which is as follows: In August, 1883, under some peculiar circumstances I was induced to trade for 18 stands of bees—15 in box, and 3 in Langstroth hives, in various conditions as to strength; and under peculiar circumstances I was obliged to move them four miles over a very rough road one of the hottest days or nights there were in said month. The consequence was, my three best colonies, and Italians at that, in my Langstroth hives, were melted down and smothered, and several in the box hives nearly ruined. Oh what a day and night of horror! It makes my heart jump and my blood curdle when I think of what suffering of mind and body I passed through that day. Bees were dumped out on a temporary platform, honey dripping through, bees all flying, stands to fix, bee-man gone, and everybody afraid to come in the yard: house full of bees, family all fled or hid, and I alone to suffer. But before morning it turned a little cooler. I got my bee-man to come to my assistance by sending a time or two, then going after him, though he had promised to come back and set them up, but took suddenly ill after he had got his pay. But order being finally restored, the spring of 1884 found me with 14 stands.

Pine Grove, O., May 8, 1885.

S. DANIELS.

Friend D., your little story illustrates vividly the importance of commencing with one, or at the most two colonies at a time, as I have so often urged. You began by making a purchase of 18 stands, when you were unfit to manage even one. I know something about your sufferings, mental and physical, for I have been through the same troubles; whereas, had you commenced small and increased your responsibilities as you were able to bear them, you would have enjoyed the work all through.

POOR SUCCESS IN WINTERING ON SUMMER STANDS.

My bees were packed about the middle of November, as follows: I used 1½-story hives with two division-boards—one on each side of brood-nest. The frames had holes through the center, or else sticks were laid on top of the frames for passage-ways, and a cotton cushion on top of the frames. On the side of division-boards, and on top of cotton cushion, clover chaff was packed in about five inches thick, but not tight, and still I have lost heavily. I think the packing was all right, as I wintered them in the foregoing way before, and didn't lose many; but the long confinement, and poor honey which they gathered last fall, gave them the dysentery, and thus they die with plenty of honey in the hive. Unprotected bees are all dead. Out of about 450 stands of bees which were put in winter quarters last fall, only about 50 are left in this township. In our township (Eden, La Grange Co.), our assessor worked six days

before he came to me, and found only two colonies alive. He assessed our bees at \$1.00 per stand, which makes about 60 cts. tax on one hundred stands.

My apiary would make a nice picture in *GLEANINGS* now, to see the empty hives piled up along the fence, with a dozen or more hives set in rotation that are alive yet. I can not accommodate my home demand for full colonies this spring. I have borrowed neighbor S.'s apiary to raise bees and queens for sale.

HOW TO BRING CHILLED BEES TO LIFE AGAIN.

To-day noon I walked out in my apiary where I had a small nucleus standing. I opened it, and I saw they were dead (or, at least, I thought they were). I lifted out two frames where they clustered. They showed no signs of life. Then I supposed they were only chilled, because it was so cold for the last three days that the bees could not fly. So I put the frames back into the hive, and took up the hive and carried it into the house upstairs, to the stove-pipe that goes through the floor from the stove below, and took the two frames out again and blew my breath over the cluster a few times, and soon they showed signs of life. I had some syrup in the eupboard, which was made from granulated sugar and water. I went and got it, and made it milk-warm, then I took a tablespoon and dropped the syrup over and around the cluster. In less than half an hour I had my nucleus restored to life. Two hours after, I opened the hive again and the bees then came boiling up through the frames. Then I went to neighbor S.'s apiary and there I found two nuclei in the same condition, and I treated them in the same way. Then I went to neighbor E.'s, and there I found one in the same condition; again, this was treated in the same way. Now all are alive again, except one queen which was chilled too much, and died.

Now, brother bee-keepers, especially beginners, don't be in too much of a hurry to throw these supposed dead bees out of the hive, that you are sure were alive two or three days before. By the above operation you can save many a valuable queen. I have tried this before this spring, and I therefore know that you can save them.

Ligonier, Ind., May 9, 1885. J. C. MISHLER, JR.

Friend M., I do not believe that cotton is good material for the cushions, and I am inclined to think clover chaff is not porous enough. I should prefer loose oat chaff, and coarse burlap for the cushions. It seems to me it is quite important that this matter of restoring chilled bees be well understood. Hundreds of colonies might have been saved during the past cold spring, had their owners been on the alert, and looked after them as you did.

PYRACANTHA AS A HEDGE AND HONEY PLANT.

Our bees have been swarming incessantly for the last two weeks. There has not been a day but they sent out from one to four swarms, except Sunday. Mine are not "Sabbath-breakers," like friend Doo-little's. Bees are swarming on "pyracantha" hedge-plant now, which seems to be a splendid honey-plant. We have another honey-plant called McCartney rose, which the bees work on very much.

W. C. WRIGHT.

Reagan, Tex., April 21, 1885.

HOW TO PREVENT BEES FROM BUILDING BETWEEN THE UPPER AND LOWER STORIES.

Some three years ago I wrote to you, asking if there was any way to prevent bees building comb between the brood and wide frames. I did not get any satisfactory answer. I experimented, and found that strips of tin fastened to the bottom-bar of wide frames remedied the evil entirely. I should not think that tin on top-bar of brood frame, as I see by May GLEANINGS, was half as good. Just try my suggestion the coming season, and then you won't have any more inquiry in regard to preventing their building comb so that it is impossible to get the wide frames out. J. A. HAYNES.

Stockport, N. Y., May 11, 1885.

I was well aware, friend H., that bees are quite averse to attaching combs to smooth tin, and the same thing has been accomplished in a cheaper way by simply painting the top-bars. Covering all our frames with tin is pretty expensive, and even painting is somewhat so. I suppose you know that Heddon's honey-board is principally for the accomplishment of this same thing; and may it not be the cheapest way to manage it?

A GOOD MAN.

Somebody sends us a scrap from a newspaper, containing the following:

"I plows, I sows, I reaps, I mows, I cuts up wood for winter; I digs, I hoes, and taters grows; and for what I knows, I am indebted to the printer. I do suppose all knowledge flows right from the printing-press, so off I goes in these 'ere clothes and settle up—I guess."

Come to think of it, it must be that the man had been reading our new potato-book, especially if he went and settled up as he started to do.

FRIEND D. MCKENZIE PROPOSES TO SELL BEES BY THE POUND.

I have 150 colonies of bees more than I know what to do with, and so I think I could spare a few pounds, especially as they are so strong I can not catch the queens after I have got the money for them (I mean the hybrids, 50 and 25 cts. each). Wife put on the veil and helped half a day to catch 5 queens and caught only one, and that a new weak swarm, and then she said she would burn them up (but brimstone costs money), or I would not have so many bees to-day by at least 100 colonies. Don't put this in GLEANINGS.

THE INDIFFERENT IMPORTED QUEEN

You sent to replace, came to hand on the 6th inst.; three-fourths of the bees were dead (chilled, I suppose). I thought the jig was up with the whole concern. I gave them to my wife to warm up, like the chickens, while I read the mail. It was good news when she told me that the queen was alive, but smaller than lots of our bees. I call them the race-horses. What makes some bees so very large, and some so very small, when they all have "all out of doors to grow"? Why, friend Root, if I had come across the little thing in one of my hives, without knowing who she was, I would have killed her for a black virgin, and yet I suppose she will do me more good than the \$6.00 best imported. If it went by the size, "the cow could catch the hare." I had her in the hive the day before I got the postals. I thought you were like me—had more queens than postals. D. MCKENZIE.

Camp Parapet, New Orleans, La., May 8, 1885.

DO NOT BE IN TOO GREAT HASTE TO CONDEMN A QUEEN.

The imported queen you told me to winter and try further is all right this spring. Strange her eggs did not hatch last fall. Please accept thanks for your fair way of doing. CALVIN LOVETT.

Osego, Mich., April 21, 1885.

I have often known queens to refuse to lay late in the fall, although we plied their colonies with feed, and did every thing we could; yet in the spring they would be all right. In the above case the queen laid eggs, but the eggs did not hatch. As she is an imported queen, and valuable, we advised friend L. to winter her any way, and then report. We are glad to see that she has turned out all right, and we would ask friend L. to watch her carefully, and inform us if she proves as good a queen as any, after more extended trial.

DORMAN'S REPORT: A GOOD PROSPECT OF ONLY PURE ITALIANS.

As a good many are sending in their reports, I send mine. Last winter I wrote to you that I had 52 stands to go into winter quarters. They wintered well up to March; from then until the present time I have lost 22 stands, which leaves me thirty good colonies to begin the season with. They died with dysentery. Some of them had honey-dew to winter on, and I lay it to the cause of their death. Last fall they gathered nothing but honey-dew, which is something remarkable, as I have never known them to gather it before. I have four gallons of it, and it tastes like beet sugar, and is a very dark color. There has been a general cleaning-out of the black bees in this locality, which makes a splendid prospect for raising pure Italian queens.

MOVING BEES A QUARTER OF A MILE DURING WARM WEATHER.

I expect to move my bees out of town a quarter of a mile from my old location. Can I move them without their coming back? I have called the new yard Sunny Eden. W. S. DORMAN.

Mechanicsville, Ia., May 6, 1885.

Friend D., you will have quite a job if you move your bees just at this time of year so short a distance, I fear. It can be sometimes managed this way, however: Move your strongest colony first, and the returning bees will unite with the remaining stocks. Move the strongest again, and so on. When you get down to the weakest you will find them overflowing with bees. After you take the last one away, probably quite a good many bees will come back to the old locality. One of our boys tried the same experiment a couple of years ago; but so many bees came back when the last hive was moved that they made quite a respectable little swarm. They clustered and hung out over night on a bush. He then took pity on them and gave them a queen, and they built up to a good colony.—We hope Sunny Eden will be worthy of its name, friend D.

AN ITEM IN REGARD TO BEE-FEEDERS.

Take a round piece of wood, fitted loosely in the top of a can filled with honey or syrup, the edge of the lid chamfered so the bees can suck the feed up between the edge of the can and the lid. As the food is taken out, the lid will settle down till the

feed is all taken, and the lid will be at the bottom of the can. The nice part is, a bee can not drown if he should try; and another thing is, they are as cheap as dirt, and can be made any size desired.

Martinsville, Mo., Apr. 5, 1885.

D. KEECH.

I will explain to the readers, that friend K.'s feeder is made by putting a proper-sized float into any glass or tin can having straight sides, or sides nearly straight. A glass tumbler, with the sides nearly straight, I think would answer. Get a wooden wheel that just fills the tumbler while it lies at the bottom. Bevel the upper circumference of this wheel so it will make a sort of knife edge all around. Now if you fill the tumbler with honey, and drop in the wooden float, a little channel will be left all around next to the glass, with honey in the bottom of it. As fast as they lick out the honey, the float will sink. This will no doubt work nicely; but after a while your wooden float gets soaked with honey, and becomes nasty and sticky, and is apt to smell bad besides. This latter objection would, however, apply to any feeder made of wood. Feeders made of tin get rusty in time. Now, if we could have something made of glass, it seems to me it would be a pretty nice thing; but even then it would be liable to get broken.

MRS. COTTON.

The *Farm and Garden* for May has the following to say in regard to her:

Mrs. Lizzie Cotton, whose acquaintance has proved to be *very dear* to most of our beekeepers, has found means to escape the vigilance of "Fanner" Atkinson's watchdog. We see her "ads." in one or the other of the more careless agricultural papers, but as for an editorial endorsement—we had thought that a thing of impossibility.

"Lizzie" has been exposed as an old fraud. Her high-priced model bee-hive is a very *small* model, and a *full sized* hive, made after this pattern, is no better than any common movable-comb hive. She has for many years swindled the gullible bee-keepers so persistently that even her sex was questioned. Has she now turned over a new leaf? Has she become honest? The change is almost too sudden. Let our friends steer clear of her.

STRONG SWARMS ROBbing WEAK ONES.

This used to annoy me very much. I could find no effective remedy in A B C or GLEANINGS, so I hit on this plan: Watch where the robbers go, then change the hives; put the robbers' hive in place of the one being robbed, and the other in their place, then you will see how bad they will be beat. This may be an old plan; if so, I have not seen it.

TO GET THE COMBS BUILT DOWN TO THE BOTTOM-BAR.

I raise the hive up about one inch from bottom-board.

ISAAC WYKOFF, 17-42.

Cameron, Pa., April 23, 1885.

Friend W., your plan of exchanging places with a weak and strong colony when they are robbing is an old idea. It usually answers well, I believe, but sometimes it does not do at all, and it is always a severe shock to the prosperity of a strong colony. On this latter account I should hardly want to advise it as a rule, especially if the robbed colony is very weak in numbers.—Your plan of getting combs clear down to the bottom-board is all right. The same idea has been suggested in our columns before, but not quite as you put it. We accomplished it by raising the frames, and you raised the whole

hive. This could be done nicely with the Simplicity hive by turning the bottom-board hollow side upward. Separate them a little at one end to make an entrance, and when your combs are built down to suit you, put them back in their proper place.

CARP-PONDS: WILL THEY PAY?

I should like to inquire a little in regard to carp fish. Your pond is how large, and how do the little fish get along? But the most necessary thing for me to know is, Does it really pay to spend \$200 to build a pond about 70 feet square, or, in other words, can we really expect to get that money out again? If so, how soon? The above is a most important question, as I intend to make one, and it will cost me that much to get it done.

D. E. BEST.

Best's, Pa., April 6, 1885.

No, my friend, I do not think it will pay. Our carp-pond is larger than you mention, but it was made from a piece of waste ground that was of no value whatever, and the total expense was less than one-fourth of \$200. I would not advise anybody to make a pond at the present time, in the present state of our information, with the idea of making money. If you can use the pond for other purposes, such as a skating-rink for the children in winter, a place to get ice for summer, or by way of ornamenting your grounds, it may pay indirectly; but I should say that \$200 would be a pretty good price for a pond of the dimensions you name. With proper tools and a team, a pond can often be built during a time when you would not be likely to do much else.

BEES WORKING ON FRUIT-BLOOM AND RAPE AT THE SAME TIME.

My bees are now gathering honey from fruit-bloom and rape.

C. R. SCHMELTZER.

Scholl's Ferry, Oregon, April 7, 1885.

From the above report it would seem that rape can be made to bloom very early in the spring; or, at least, it is practical in Oregon. Now the question comes up, What is the difference between this rape and the seven-top turnip? or is not this kind of rape that blossoms so early what we call winter rape? and is it not identical with seven-top turnip? I have seen both in bloom on our grounds at the same time, and I could discover no difference.

GIVING BEES WATER IN THE COMB DURING SHIPPING.

When shipping bees I give them water differently from anything I have ever heard of. You advise sending nine frames. I send ten. I put water in one of them the same as G. M. Doolittle puts in syrup for feeding. You can put in a pint of water, more or less, according to the distance they have to go. It's the best of any thing I ever tried, but perhaps it's old with you.

I wish you would tell us in GLEANINGS how you bend your tin rabbets for hives. I don't find any one who can fold them with a tin-folder, but that makes them round on the bottom.

D. S. BASSETT.

Farnumsville, Mass.

Friend B., we tried your plan some years ago; but as the most of our shipping is done at a time when bees are gathering new honey, we have hardly thought it necessary, for new honey generally contains a large

quantity of water; in fact, it often runs out of the combs on to our clothing, when the combs are tipped sidewise. At times, when the honey is all old and sealed, I should think very likely a supply of water would be an advantage, especially during hot weather.—A good tinner's folder will fold the rabbits all right; but a folder that is made strong enough and accurate enough to do it properly, costs \$30.00 or \$40.00. If the rabbits are slightly rounded on the bottom, it does not matter materially.

MAKING DARK HONEY WHITE.

I read a short time ago in a newspaper, that in sugar-refineries the syrup is filtered through animal charcoal, and by this process the syrup lost its color. Will you please ascertain if this report is correct? and also ascertain the exact way to proceed, and the cost of this process? Please attend to this matter, and give results in GLEANINGS. We have a great deal of colored honey (No. 1 in quality), but unsalable on account of color, and if a cheap process can be ascertained it will add thousands of dollars to the earnings of bee-keepers.

Mauston, Wis., Apr. 14, 1885. CHAS. H. GROTE.

I believe it is a fact, friend G., that sugar-refiners do remove the coloring matter from syrup by filtering it through animal charcoal. I do not know whether the idea is possible with honey or not; but I agree with you, that it would be a most desirable process if possible. Have we, among our readers, any one sufficiently acquainted with sugar refining to answer friend G.'s question?

BEE-KEEPING AS A BUSINESS.

I happened to be writing to one of my old A B C scholars; and as I had not heard of him for some time I asked him if he was still a bee-man. The following is his reply, and there seems to be a moral in it:

As for being a "bee-man," I came as near getting over it this winter as I ever did. They "friz." Now don't tell me to fix 'em up warm in chaff hives, etc. I know all that. When I lose bees it is always the colonies that are seemingly strongest and best prepared for winter. The strongest swarm I have now was in one-story Simplicity, no cushion, several holes in cover; late swarm. I do not talk and write as much about bees as formerly, but like them as well as ever, and make them pay their way. It is easier to get 100 lbs. per colony, than it used to be to get 25 lbs., because of "the know how." It seems at times as if bees were the best stock a man can keep; at other times they seem a mystery, a delusion, and a snare. But for all that I expect to own a few colonies as long as I perambulate this little ball of mud. I'm not sure but I'll get some of A. J. Root's cheap big baskets to winter them in; take bees out of hive on to bottom-board, turn basket over them, and winter all right. See?

Remson Corners, O., Apr. 15, 1885. S. LUCAS.

Friend L., the point you make, that bees winter with a hive full of openings, when they do not winter with the best of protection, has been made several times, and I think it points out pretty clearly that you have been packing your bees too closely. Put loose chaff and nothing more over the frames; or if that is not sufficiently porous, fill the upper story of the chaff hive with

forest-leaves, dry and loose. To prevent the bees from getting up among the leaves, I would use a burlap sheet. May be the cheap big baskets would answer better than some of the hives you have been using.

A LITTLE STORY WITH A MORAL.

When the postmaster saw the last metal block come he dived down into a box and brought up another. It seems it had got lost out of the package of metal corners, and he had not known whom it was for, so it lay in the office all the time. If I had asked him for it he would have given it to me.

ALBERT W. HINDE.

Anaheim, Cal., Mar. 31, 1885.

I suppose that most of you have had experience in inquiring for things both at express offices and postoffices, and being told they were not there, and it afterward transpired that the same thing had been waiting for an owner for some time. One of the hardest things to manage I have ever found, in almost any department of business, is to avoid the accumulation of rubbish. Sometimes I go into the counter store and find a variety of odd traps stuck here and there. When the clerks are called, sometimes they reply, "Why, it has been lying around here this long while;" and in spite of every thing I can do, we have this state of affairs over and over. At the very time that they were tolerating or harboring this accumulation of rubbish, somebody was suffering sadly for the need of the very article. We try to tie up all packages so that it is almost impossible for the label or address to get detached; but for all that, they do sometimes get astray in the mail-bags. Now, if I were looking and waiting for something as you were, friend H., I would go to my postmaster and say something like this: "I have been watching and waiting very anxiously for a little square piece of iron that was to come through the mails. You have not come across any such thing 'lying around loose,' have you?" A great many times such an explanation will bring the missing thing to light where you would not find it otherwise. The same is true of the express business.

KIND WORDS IN REGARD TO BURMAH.

Great streams from little fountains flow,
Great oaks from little acorns grow.

I am reminded of the value of little things very forcibly by reading those letters from our missionary brother in Burmah. Some four years ago I asked you to send GLEANINGS to him, which you kindly did. That, like a little seed, dropped on fertile soil, sprang up, and lo! from this we have the "Pioneer Apiary of Burmah" already fully under way, with unlimited possibilities of usefulness in developing an industry which may be made of great value to the benighted race. It is a great pleasure to read Bro. Bunker's good letters, and to think that we helped him—just a little—to get started. Let's shake hands, Bro. Root, and all rejoice together. Let us not neglect, "as we have opportunity," to drop a seed now and then, in out-of-the-way places, which may "bear wheat, perchance some other grain."

In pursuance of this thought I have rolled up a package of Sunday-school papers to send out to a desolate home in the wilds of the Elk Mountains, of Colorado. Two little girls of ten and twelve years

live there with a drunken father, far away from school or neighbors or Christian influence. I hope the roll of pretty papers may brighten those sad little faces and cheer their dreary life a trifle. How I came to know of them would take too long to tell, and be a story in itself.

Our bees did rather poorly last season in the way of surplus. The heavy and continued rains seemed to wash the sweet all out of the flowers. This has been a hard winter so far, and many bees have "turned up their little toes." We went into winter quarters with 50 colonies. CLARA BUNKER.

El Dara, Ill.

A HINT OR TWO ON WINTERING.

I had last fall 35 colonies that I started to winter, and I have now 25. I let them alone until March 4, when it had been warm for two days, and I thought I must look some of them over. I found them all alive, with a few without any honey near the cluster; those, I moved the outside combs up near the bees so they could reach the honey. That night it came off cold, and remained so for the rest of the month. April 1st I found that four had died (three whose honey I moved), and two more ready to go, with only a few bees and a queen, which I couldn't save. It was warm about the middle of April, and I found four colonies dwindling. I tried to save them by adding hatching brood, but it was of no use, for it came around cold again, and most of the brood was lost (the bees were dying very fast, and there were not bees enough to cover the brood). Don't advise putting brood to weak colonies in a cold spring; better form a nucleus by taking one or two frames of hatching brood covered with bees, and shut them up in a good warm hive with division-boards, in a snug place for three days, and then put them in your dwindling colony.

The bees that I lost were from late August and September queens, except two that I disturbed every day in March, by going after hens' eggs in the leaves beside the hive. The honey in the others, although there was enough, was too scattering. The hives were my chaff hives. I shall see to it in the future, that my bees have sealed sugar or honey in every frame to the bottom, and then be contented until warm weather before I look at them. I moved my bees last November to where I now live, so that had something to do about the loss. J. L. HYDE.

Pomfret Landing, Ct., May 18, 1885.

"BE YE NOT WEARY," ETC.

I noticed friend Waterhouse, in GLEANINGS OF Apr. 15, says he can produce as cheap and good extracted honey as any one. Well, he deserves it, because he went through his tribulation and apprenticeship without getting discouraged, and comfort is his reward. CHAS. GUTEKUNST.

Bayou Chene, La., April 27, 1885.

What you say, friend G., is simply another way of expressing the old Bible promise that I have started at the head of this.

HIBERNATION: DOES IT INJURE A BEE TO BE THAWED OUT QUICK?

I read Mr. Doolittle's article on the hibernation theory with much interest. I think that perhaps it's not quite complete. In the first place I don't think that a frozen bee or insect of any kind can be handled carefully enough to be free from injury while frozen hard. Second, thawing them out too rapidly seems to be an injury. Just think of how very cold our fingers feel when warmed too fast;

then how different when bathed in cold water. An apple can't be frozen hard enough to injure it here at 40° below zero, provided it is three weeks or a month in thawing out. Then one that is thawed out in two days will turn black, and is then spoiled. If a bee's whole body hurts all over when quickly thawed as my fingers have when quickly warmed, I don't wonder at his dying before he is limber enough to kick.

JOHN NORRIS.

Manchester, Ohio.

Friend N., I have often thought of the point you make, but I am inclined to think that it does not hurt a bee to be thawed out as it does a human being; for bees, when warmed up, after being chilled, seem to be just as good as ever in an hour or two.—For a long time I doubted the fact you mention, in regard to apples; but last winter we had turnips frozen as hard as they could be, for months. They were lying on the ground, covered with straw; and when fully thawed out in that position they were as good as those that were never frozen. May be it will not always work, and may be it does not work with all sorts of turnips. Who can tell us?

CAN A CHRISTIAN CONSISTENTLY SELL TOBACCO?

The *Sunday-School Times*, in discussing the above question, which was propounded to them by a Massachusetts subscriber, replies as follows:

A Jerseyman was seen gathering some wild mushrooms in the woods. "Look here, my friend," said the passer-by, "those mushrooms are rank poison. You'd better let 'em alone." "Oh! don't be afraid," was the quick response. "I ain't picking 'em to eat. I'm picking 'em to sell." But those are mushrooms, and that was in New Jersey. About selling tobacco in Massachusetts, we would rather not express an opinion.

HEDDON COVERS, ONCE MORE.

I see that you and some others fear that the Heddon covers may be easily blown off the hives. I have used these covers two years, and have never had one displaced by the wind, although I have used no weights of any kind. The bees fasten them with propolis in a few hours, so that it is impossible for the wind to lift them off. They are the lightest covers I have ever used, and the easiest taken off and replaced. I think that about 75 per cent of the bees in this locality will be dead May 1st.

Bloomington, Ills., Apr. 4, 1885. R. I. BARBER.

Thank you, friend B.; but if your bees fasten the covers down with propolis so the wind can not blow them off, they certainly can not slide on to the hives in the way friend H. describes; and if so, how can you put them down into place, unless a very great deal of time be taken, without killing bees?

PHOTOGRAPH OF THE MEMBERS OF THE BEE-KEEPERS' CONGRESS.

Can we not hit on some plan to number and name the bee-keepers of N. O. Bee-Congress photo? I can name 22 of them correctly from memory, and would like to get the rest. JAS. A. NELSON.

Wyandott, Kansas, April 18, 1885.

Friend N., what you speak of would be very desirable indeed, if it could be managed. Perhaps I may explain to our readers, that toward the close of the session it was suggested that the entire lot of bee-keepers present in New Orleans should group them-

selves together on the grass and have our photographs taken. When the question came up, the matter of identifying the different members composing the picture was mentioned, and I called upon the photographer and explained to him fully how we managed it with the bee-keepers' medley; viz., by affixing a number on the negative so that the different individuals would be all numbered, making it possible for an explanatory key to give the name and residence. There was, however, some difficulty with the artist about the matter, and the pictures are sent out without being numbered. Now the question is, Can a printed slip be so arranged as to designate each person, as it is? I confess I do not see just how to manage it where there are so many different people.

A NEW TRICK FOR DISCIPLES OF IZAAK WALTON.

We have a friend of yours in this country, John Ross by name; he is a member of the M. E. Church South, a good bee-man, and an active farmer—a Nimrod of a hunter, and a pretty good member of the Church; but his last trick is new to me. He lives on the bank of Oyster Creek; the trees overhang the water, and John likes fish, but is too fidgety to fish for them, so he baits his hook and ties the fishing-line to the limb of a live-oak, and ties a cow-bell to the end of the limb. When the fish gets hung on the hook it rings the bell, and John gets up out of bed and takes the fish out of the wet (he sets his line at night). Isn't he smart? G. H. PHAIR.

Velasco, Texas.

Many thanks, friend P. The idea is ingenious; and from what experience I have had I do not see why it would not work. If one could spare the time, his chances would probably be a little better to have control of the line about the time Mr. Fish was getting hooked on; but by having several lines arranged as you mention, I think it might work pretty fairly in a proper locality.

A BROTHER IN TROUBLE.

Too many bees! what shall I do with my bees? My hives are so full of bees and honey that I know not what to do with them. There is not much sale for them in this section, and I have as many colonies as I wish to keep, and I think they will all swarm this season, so I am thinking what is best to do with them. I wish that some of the bee-keepers who have so many empty combs had some of my Italians. Their combs would not be empty a great while.

ALBERT G. BRUSH.

Susquehanna, Pa., April 27, 1885.

Dear me, friend B., what a queer lot we are! Some of us are in great trouble because we have not any bees at all, and others are in great trouble because they have so many. What shall you do? Why, divide up with the sufferers, of course, and make the prices as reasonable as you can. Sell them off by the pound; and if you can raise some queens to go with them, it would help all around.

FASTENING THE BEES INTO HIVES WITH WIRE CLOTH FOR CELLAR WINTERING.

We put 26 colonies in cellar, and packed 6 in Root chaff hives on summer stands. The 26 colonies wintered in the cellar are now all alive, with hives full of bees. We wintered in a cellar of 40°, with venti-

lation through the hive, by covering the bottom with wire screen, and raising the cap $\frac{1}{4}$ inch, with one corner of mat thrown back. One hive, where we did not raise the cover, lost nearly as many bees as the other 25, although in other respects put up in the same way. Our chaff hives were contracted to 7 frames, with thin division-boards on each side, chaff between boards and side of hive, upper story filled with chaff, all alive and brooding March first; four dead with dysentery April first. There were but few days in March when the temperature was above zero, and it was down to 26° below during the month. Conclusion: We have decided to winter our bees in the cellar, with 40° of heat, ventilation through hive, wire screen on bottom, both top and bottom ventilation for cellar, with plenty of wholesome sealed honey, and I think we can then stand the most severe winter of this climate. We can't rely on chaff hives here, although we have had bees winter nicely in them heretofore. I don't see that pollen makes any difference in the cellar, as there was no apparent difference in those with and without, excepting brood. J. J. HOLLENBECK.

Saratoga Springs, N. Y., Apr. 25, 1885.

ATTACHMENT FOR BARNES SAW.

A strip of ash, $\frac{1}{4}$ in. thick, $1\frac{1}{4}$ in. wide, and 4 ft. long, with one end fastened to the top of the cut-off gauge by two screws can be used as an extension, either to the right or left, and a stop can be fastened almost instantly at any point by a small iron clump, which any blacksmith ought to make for 10 cents. I have used this sort of an extension to the cut-off gauge for 4 or 5 years.

E. Springfield, O.

R. M. REYNOLDS.

We have many times used something quite similar to what you describe, friend R.

FRIEND MUTH COMMENTS A LITTLE ON THE GENERAL DEPRESSION IN THE SUPPLY BUSINESS.

It appears that you experience, as we do, a very dull season. It was with us, last winter, too much honey on hand and too large a capital invested with too slow a demand for the article. There is no demand for honey now but from our regular customers who had taken a rest last winter. Last year, about this time we were shipping 500 to 1000 bee-hives per week, while we don't ship 100 hives now. Matters will take a change again after awhile, as has always been the case; we have, therefore, to exercise a Christian patience. CHAS. F. MUTH.

Cincinnati, O., May 15, 1885.

A HOME-MADE TELEPHONE THAT WILL WORK HALF A MILE.

If you want a telephone that will work 1200 or 1300 feet, here is one. Take a piece of green calf-skin, and dress it the same as you would for a drum-head. Take a one or two quart measure, wooden, and stretch the skin on tight while green. In fact, make a drum-head of it. One measure will make both. Put the wire through the center of your drum-head, and fasten to a wooden button, and you will have a telephone that will work half a mile. E. A. ROBINSON.

Exeter, Maine, April 8, 1885.

No doubt, friend R., a telephone as described above would work as well as any in the market. The first telephone we used was much like the one you have described, and I believe it gave about as good results as any we have had since.

DRY FECEES, AGAIN.

I have just received from Dr. C. C. Miller some long, cylindrical, dark-colored masses, some bent, some straight, and some constricted so as to appear bead-like. The accompanying drawings represent the bent and constricted ones, and are magnified



BEE-FECEES.

They break up at once when put on a glass slide with water, as do all bee-feces when dry; do not melt with heat, are not dissolved in alcohol and ether; and as they break up in water they are found to be composed wholly or almost wholly of pollen grains. In some I found quite a number of hairs and other fibers.

As stated in my address at Cincinnati on this subject (see *A. B. J.*, 1882, p. 626), fecal matter in bees is semi-solid. Of course, the liquid may be less on occasion, as we find in all animals. I have never seen such solid fecal pellets from bees as these before, but am not surprised that they may exist. In all animals, the fecal excreta varies much at times in its consistency.

This is not the "dry feces" so much talked of in our papers. That is the matter dropped by bees in their winter quiet; and, as shown in the article just mentioned, is wax and other matter kneaded by the bees by use of their jaws, and dropped as pellets to the bottom of the hive.

A. J. COOK.

Agricultural College, Mich.

TWO OR MORE EGGS IN A CELL.

I have seen along in the bee-papers, that a queen always lays but one egg in a cell, but that a worker will lay more eggs than one in a cell; and also that a laying worker is developed only in the absence of a queen. To-day I was overhauling my bees, and I was astonished to see about a dozen cells contiguous that had three eggs each, mostly sticking to the sides near the bottom; and yet within three or four inches of these cells was a fine queen moving about as usual over the comb and among the bees.

Baltimore, Md., May 20, 1885.

C. GARWOOD.

One egg in a cell is the rule, friend G.; but, as is usual with bees, there are a good many exceptions. Where a vigorous queen has but a small cluster of bees, she will often go around and lay eggs in the same cells over again, for want of some better employment, and in that case it indicates nothing wrong. Give her a couple of pounds of young bees to provide empty cells for her, and she will put one egg in a cell as nice as can be. A good fertile queen should, however, stick each egg in pretty nearly the center of the bottom of the cell. If they are sticking along the sides of the cell, near the bottom, as you say, it usually indicates something wrong, and the queen often does this kind of work just before she plays out entirely. Fertile workers lay great numbers of eggs in a cell—sometimes a hundred or more, and very often

they stick them around the sides of the cells, on top of the combs, etc. In rare cases, however, they deposit them regularly, filling the cells as they go along. A good queen fills the cells regularly as she goes along; and where the cells are skipped here and there, we generally have pretty good reason for suspecting that it is the work of a fertile worker. If several eggs are in one cell, and none in another, the evidence is still more conclusive of a fertile worker, or a queen that does not amount to much.

SLATTED HONEY-BOARDS.

I invented and used a slatted honey-board long before I heard or read of a Heddon honey-board. I just nailed slats on to end-pieces to keep the bees from building combs between the top of brood-frames and the bottom of wide, or section frames, and it does well. Said end-pieces rest on the ends of brood-frames, and leave a bee space all around between honey-board and hive.

COMB-FRAME STAND.

One of the simple but very useful things in my apiary and extracting-room, that I invented and never have seen or heard of in any other apiary, is a little like a light low stand without top-board, made to hold a set of wide or brood-frames. I use two of them.

D. TYRRELL, M. D.

Toulon, Ill., May 18, 1885.

LIVED IN SPITE OF BAD TREATMENT.

The first of last July I purchased 12 hives of black bees, going 20 miles for them with a spring wagon. I commenced shutting them in as soon as they were all in in the evening, which was quite a job, as the hive-maker was not a workman, nor the hives of the most approved pattern. However, I got them shut in by nine o'clock P. M.; and to hasten matters I took strips of pine and nailed over the entrance and all cracks. A few had wire cloth over the entrance. I started for home at 4 A. M., and arrived at my destination at 12 o'clock noon, of one of the hottest days the summer can boast of, all in good condition. I am satisfied that there is too much ventilation given generally.

My Italians that are now the strongest, and consumed the least amount of honey, were covered entirely out of sight with snow for about six weeks. Some I kept enameled cloth covers on over winter, and I find them all right. In cellar, I would not care how much ventilation it had, if with warm air; but I would keep the hives closed. Bees have wintered fairly, as far as I have heard, in this country.

Bethlehem, Conn., May 6, 1885.

F. A. MALTBY.

Friend M., I should say that you got off remarkably well. We have all seen and read of hundreds of colonies that were entirely ruined by being shut up, apparently in the very way you closed those hives on that hot summer night. Probably the hives were so old, and had so many cracks through them, that they got sufficient air in spite of the way in which you fixed them. I should be inclined to think the colonies were not very strong, and that the hives were pretty good size. One of the first purchases I ever made was under circumstances a good deal like those you have mentioned; and although I moved them only across the town, the whole contents of the hive ran down into one heap, and the mass was almost scalding hot. My honey ran on to the

ground, and my bees were all lost, except a few that I washed off with water and dried in the sun, in a box covered with wire cloth.

HOW OUR FRIEND MRS. JENNIE CULP PREVENTS SWARMING.

In the May No. of GLEANINGS Mrs. Culp says, "As my object was honey and not increase, I prevented swarming." Now, that is just what I most want to know how to do. Will she not tell me, through GLEANINGS, just exactly *how* to do this, and perhaps thus oblige others as well as myself who are just beginning? My two swarms of Italians have wintered through nicely in chaff hives.

Fluvanna, N. Y.

SARAH M. BENTLY.

We forwarded the above to Mrs. Culp for an answer, and below is her reply:

My method to prevent swarming is to keep queen-cells pinched off, and give them plenty of working room. This can be done by tiering up, if you have the right kind of hive with movable frames, or by taking frames of brood from brood-chamber, and use them to build up weak colonies, then by giving them room. This the sister can not do if she has only two colonies.

JENNIE CULP.

Hilliard, Ohio.

MAKING SUGAR SYRUP WITHOUT BOILING.

I will decide with you as to making feed. I see that some think they can't make it without boiling. I will say, that that is all a notion. I have not had much experience in bee culture, but I fed about 4 gallons of syrup last fall, and I never boiled it, and it has not crystallized a bit. I think I can make it every time so it won't, and without boiling.

GEORGE M. GARNY.

Carver, Plymouth Co., Mass., May, 1885.

CALIFORNIA AND HER CAPABILITIES.

THAT 10,570 LBS. COMB HONEY FROM 18 STARVING COLONIES.

I SUPPOSE all the distinguished bee-keepers in the world, except myself, were at New Orleans. I should have liked to be there too, but that was impossible. I see by the papers that the large honey reports for last year, from this State, were doubted; or, rather, that many thought there must be some mistake. This is nothing more nor less than pronouncing them fraudulent. Now I am going to show you that *one* of the reports was true—true to the letter—except that it was not big enough.

Let me digress here, friend Root, to say that I do not believe that we yet half understand the capabilities of a swarm of bees, in tiptop condition, and floods of honey literally flowing down the mountains, as it did last year! I believe the time will come—and it may not be far away—when 1000 lbs. of honey may be got from a single colony and its progeny, in a single season. Lunatic, eh? Well, there is one consolation anyhow. The Stockton asylum is full, and they have not commenced the new one yet, and so they won't take me for a while. But, to return.

In proof of the above, there were two of our hives which gave us but about two section boxes—say 28 lbs., of honey. What their descendants did (if they

had any) is more than I can say. These two hives never swarmed that we knew of; and they made only about 28 or 30 lbs. of honey each. Now throw off the odd 70 lbs. for this, and you will find the average for each hive that *did* swarm was 656½ lbs. I do not wonder that bee-keepers are astonished, nor do I wonder that they doubt it. But because it never *was* done before, is no valid reason that it can not be done. You are old enough, and I am old enough to remember the time when, if we had gone round telling people that the time would come when we could talk to our friends 500 miles away, we would both have been looked up as lunatics! Here it is, you see. Men make a high-water mark, as it were, in their own minds. On this side of that mark lies the possible; but beyond lies the impossible. But they often have to move the mark a little more beyond. So it is in this case. You will have to move the mark, gentlemen, a little more beyond. Some of these 16 hives gave much more than others, so I must come to the conclusion that some of the old hives and their progeny gave as high as 800 lbs. of honey. Push the mark a little further on, gentlemen. Who will say, knowing the past and looking into the future, that no hive of bees and their progeny will ever make 1000 lbs. of honey in a single season?

And these are the dilatory, short-snouted, lazy Italians. They sleep too late in the morning; in fact, don't get up till after breakfast. They go to bed before sundown, and can't snatch it from red clover. Do they need some brown German blood in them? What do they need?

Now, dear friend Root, I want you to stand by us in our trouble, and tell us what to do. Reading over the advertisements in the bee-papers, we find that we have not got the right kind of bees at all. We have not got "the bees for business." They get up, and scratch gravel before daylight. They can fly faster, dive deeper, claw out and carry away more honey, than forty Italians. They never go to bed at all—no, never wink an eye. They have the brown German blood in them. Shall we get them?

Now let us go back to the honey crop. Below is the certificate of Messrs. Hamilton & Co., that they received in store from us 141 cases comb honey, averaging 56 lbs. to the case, which is equal to 7896 lbs.; now add 5½ cases here, 56 lbs., 308 lbs.; 68 hives containing 60 lbs. honey in brood-chamber, 4080 lbs.; 1 ton of section boxes, which was unsalable because the outer end was not sealed up. They are now on the hives again to be sealed up, 2000 lbs. Total, 14,284 lbs. Now deduct amount produced by the lower apiary, say 3480 lbs. Product of the home apiary, 10,804 lbs.

Now besides this we sent two cases to the Light-House, and one case to a lady friend in Los Angeles; these, making 168 lbs. more, were never counted. Also some 10 to 15 gallons of strained honey, which came from broken comb and crooked honey, that was likewise never counted. Gentlemen may stand agape, and wonder what is coming next. But I produce the certificate of receipt in store. I produce the certificate of the men who hauled the honey to town. I produce the evidence of my nephew, who helped to handle the honey, and who is familiar with every move and motion from the beginning to the end.

Now, gentlemen, go back to New Orleans and put your wise heads together, and resolve that there "must be some mistake about it." While you are

took a premium as long as I exhibited. I took it, ribbons and all, to one groceryman, and said, "If you will sell this honey for 25 cents per lb. I will agree to sell you all that I raise at 20c. per lb.; and if it does not sell I will take it back." Produce nice honey; keep your extracted honey until fall; put it up in Mason's fruit-jars, and just bring it in about as fast as he needs it. It is poor policy to force a market; just take a note how business men do in establishing a trade in towns: they simply, as a general rule, let one firm handle their goods. By the above plan I never failed to get 20c. per lb. net for extracted honey. Consumers would often say that they could get honey cheaper from large cities; but as they knew what they were getting, they did not object to the price. Also, do you know when you put your honey in those narrow $4\frac{1}{4} \times 4\frac{1}{4}$ sections that hold only 12 ounces, the producer getting pay for actual weight only, that you are robbing the consumer out of 4 ounces, or are the means, at least. Now for proof: You all can see what honey is worth in Kansas City, Mo. Now, a grocery dealer here sent to Kansas City for some comb section honey: it cost him 20c. per lb.; that is, each section was counted 1 lb. to him. He sold it for 25c. per section. They weighed only 12 oz. each. When I asked him he said they called it 1 lb., so he sold it by the section. Now, the commission men got the most benefit out of this honey, as they made 100 per cent, as you can easily count up. That is one reason they tell you that dealers prefer a light section under 1 lb.

H. F. HAGEN.

Ellinwood, Mo. Kansas, May 15, 1885.

Friend H., your suggestions are excellent in regard to putting up Simplicity hives. We try to have our lumber thoroughly seasoned before the hives are made; but every mechanic knows that, after lumber is dressed and cut up into small pieces, it will shrink considerably more; and the worst feature of this shrinking is, that the pieces shrink unequally. Your idea of selecting those of a width for each hive, before you commence nailing them up, is excellent. Another thing: If you can not find pieces exactly of a width—that is, suppose the end is a little narrower than the side to which it is to be nailed, be sure to let the side piece project equally beyond the end piece at both top and bottom. You need not argue with me about this matter, because I am old in these things. If you put them together so they are even at the top or even at the bottom, when you come to pile your hives up the crack left will be twice as wide as if the space were divided. Worse yet, if two hives having large spaces happen to come together it would make a space large enough to let bees out. By dividing the space as I have told you, there will be scarcely a possibility of any such mishap. These small openings in the Simplicity hive will do no harm, but, in fact, are a benefit, because no other provision for ventilation is made.—Your ideas in regard to keeping a uniform price on your honey are excellent. There are many articles of merchandise on which the manufacturer is absolutely obliged to control the retail price, to save his business. The new Ivory soap, for instance, that is advertised so extensively, the manufacturers sell to every dealer at a fixed uniform price. If he

takes a certain number of boxes, it is laid down at his door, freight paid. To prevent cutting under, and rivalry, every order must go through the hands of the nearest wholesale grocer. The soap goes in one fixed regular channel from the factory to the consumer, and there are no deviations. The plan you suggest in regard to it is the thing exactly.

SOME QUESTIONS FROM CALIFORNIA.

MAKING BEES WORK DOWN AS WELL AS UP, ETC.

I WANT to ask you a little about transferring some of my bees into my new Flory hive. Mr. Flory says I can set the old swarm on top of my new hive, and the queen will work down better than they will up. Now, I fail to find much about that in your A B C book. If I can transfer my bees by setting my new boxes under the old ones, that will save me lots of trouble; and if you will give me your advice on the matter, I shall be much obliged.

CHAFF HIVES IN CALIFORNIA.

What do you think about the chaff hive in California? Do you think it would pay out here? And how about something to lay on top of my frames, to keep the bees warm? Out here, people do not use anything to cover the bees but just the top board, and I think they would do much better if they were kept warm; that is the reason our bees are so backward about swarming out here. Our bees have been working a long time, and they do not swarm out much, yet I have two swarms from 33 stands of bees, and my neighbor Hobler has only four or five swarms this season, yet he has got his from Italian bees. Mine are blacks.

HIVES WITH FRAMES OF DIFFERENT SIZES.

The way my hives are, I can not take a frame out of my old hive and set it in my new swarm, because they will not fit; that is a drawback to me this season. If I can get them all in one kind of a box, it will be more plain work.

ALFALFA.

We have a big alfalfa crop out here this season. Last season was a poor one for them, but it has got to be a big business now in California as well as other parts of the world.

M. J. TWining.

Hanford, Cal., May 12, 1885.

Friend T., as a rule bees seem to prefer working up rather than down, although when crowded for room they will often fill an empty hive placed under the old one. If Mr. Flory has tried it, and finds that it works successfully, I should try one or two that way. In my opinion, however, they will have to be crowded more to get them to take the new hive than if you would put the new hive on top. Either mode is, however, rather behind the times.—You can not do any thing very well until you get your apiary in such shape that any frame will go into any hive.—In regard to chaff hives in California, the matter would have to be determined by actual experiment. If you have cool nights, so cool, in fact, that it drives the bees out of the surplus boxes, then chaff hives would be a great advantage at such times, and I think they would be an advantage during your hottest weather in protecting the bees from the direct rays of the sun.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,
EDITOR AND PUBLISHER.
MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, JUNE 1, 1885.

But foolish and unlearned questions avoid, knowing that they do gender strife. II. TIM. 2: 23.

OPERA-GLASSES FOR BEE-HUNTING.

We have ceased to keep the \$3.00 opera-glass, because the \$5.00 one proves to be so much better in quality of lenses, and workmanship of the whole instrument.

PRICES LOWER.

We have been enabled to reduce the price of so many commodities that perhaps it will pay you to have a new price list if you have not had one during the past thirty days.

THE MARBLE MONUMENT IN NEW ORLEANS TO THE MEMORY OF MARGARET.

FRIEND D. M. MCKENZIE INFORMS US that the marble statue to the memory of Margaret, mentioned in *Our Neighbors* for April 15, is the only monument in America, to the memory of a woman.

THE A B C OF CARP CULTURE.

THE delay on this work was caused by a dilatory engraver, and by the sickness of Mr. Peirce, the author. Of course, no one is to blame for being sick, and I did not intend to blame any one but myself, in the editorial comment on this subject last month. The worst part of it is, the book has not even yet put in an appearance.

BUSINESS JUNE 1.

We are all up with orders, and have been for almost a month past; in fact, you can have almost any thing you want by return mail, freight, or express. In some respects it is a pleasant way to do business; but I fear that many of the supply-dealers will have a pretty dull time unless they keep close to shore during the coming fall and winter.

OUR CARP-POND.

OUR thanks are due to friend Kaler for some beautiful specimens of German carp. They came to hand bright and lively, and are now enjoying themselves in our carp-pond with perhaps 130 or 140 more, in size from an inch to one foot or more in length. We have not been able to make them take their food yet. Perhaps the reason is, there is so much rubbish in the way of water-plants, soft mud, etc., that they have not yet had time to come down to a diet of bread and water.

CALLING THINGS BY THEIR RIGHT NAMES.

Is it any wonder that our clerks make mistakes sometimes in filling orders, when people will persist in using odd terms for what they want? Here is a specimen card:

Will you send me the book and the price of the tin hinges for the slats in the bees' boxes? Please send me a list of all about the bee-gram. JAC. L. SNOODGRASS.

Reed's Mill, Jeff. Co., Ohio, April 7, 1885

Now, if anybody can tell us what friend S. means

by "tinned hinges for the slats in the bees' boxes," we should like to have him stand up and enlighten us. We sent friend S. a prospectus of the A B C book, and a price list.

WHICH EXTREME SHALL WE CHOOSE. "TOO MANY EGGS IN ONE BASKET," OR "TOO MANY IRONS IN THE FIRE"?

QUITE a discussion has come up, and seems bound to come up, in regard to which is the better of two extremes—choosing a specialty for your occupation in life, or having a variety. It does not seem to me, dear friends, that there is any need of wasting a great amount of words over the matter. Where one goes too far to one of the extremes, his friends are in duty bound to urge strongly the merits of the other course, and this is true in any other thing as well as business. Some men are disposed to fall into ruts, and get so deep into their ruts that they can not see what is going on outside of their rut. Others are so prone to have so many irons in the fire that they need constant admonishing in regard to their besetting sin—the sin of scattering one's powers to so great an extent that he excels in nothing. In regard to the way GLEANINGS is managed, the preference of *by far* the greater part of its readers is, that it shall notice, to a reasonable extent of course, the new things that come up in kindred rural industries; that is, where one objects to taking up such a thing as carp culture, at least a dozen say, "Let us know about it;" and when something else comes up that farmers, professional men, and even merchants, who like to get out outdoors, are likely to get interested in, tell us about it. To satisfy the minority, it may be that it would be well if the reading on the cover should be changed to "Devoted to bees and honey, and other rural industries;" but it seems to me GLEANINGS may look over the fence occasionally, even if we don't put this in its head.

SENDING QUEENS BY MAIL FROM CALIFORNIA IN FEBRUARY.

I OMITTED to mention, at the proper time, that friend Norton did send us a queen, lively and in good order, all the way from Gonzales, Cal., during the month of February. The queen and bees were carefully packed with woolen cloth, so as to enable the cluster to keep the inside of the little cage warm, in spite of frost without. Accident may have favored the transit somewhat, perhaps, although a good deal is due to careful preparation. Now, friend N., if you can send queens safely to the States in February, why can't you supply the good people west of the Rocky Mountains with good queens all summer long? By getting an imported queen to breed from, you can furnish just as good stock as we do, and it is a great piece of folly for the friends in California to send clear here for queens by mail. May be there is something in the fact that we always have queens on our table, ready to go back by first mail; but, bless your hearts, can't some of the other brothers and sisters take advantage of this splendid means of advertising, as well as A. I. Root? What ever ails you, friends?

SENDING QUEENS PROMPTLY.

Just one little illustration of the trouble it makes by being behindhand on so simple a thing as a queen. A few days ago the orders were too numerous for us. One friend had to wait several days for an untested queen. We could not tell him just when it would be sent, because we did not know

how fast the brethren who were raising them for us down South were getting along. Well, even during those few days of delay he wrote us that he had traveled *thirty miles* in going to the postoffice and back again after his queen. He expected us to send the queen right straight back, as we always had done heretofore.

HEDDON'S HONEY-BEARD MADE FOR SIMPLICITY HIVES.

I AM sorry to say, that, through some unaccountable blunder, 300 or 400 of these have been sent out, having only 9 spaces instead of 10. It is true, you can use only 9 frames in a Simplicity hive, and some prefer to do so; but where we are working for comb honey, I would by all means have the combs trimmed so they will come down to the regular orthodox number of 10 combs for an L. hive. If the friends who have received these nine-space honey-boards will write us, we will try to make the matter satisfactory. They can easily be made right by drawing the nails and putting in an extra slat; or they can be used with 9 combs; or even if used as they are for 10 combs, I suppose there will not be much trouble by bees building up through them.

BEE-SWAX.

FOR the present, the best we would dare offer for good average beeswax is 24 cts. cash, or 28 cts. trade. This to take the place of the offer on the cover of this number.

WE are this 28th day of May notified that the ABC of Carp Culture has been shipped us from the publisher.

WE have to-day, May 28, 6465 subscribers.

CIRCULARS RECEIVED.

Arthur Todd, Philadelphia, Pa., sends us a nice 8-page price list of bees, hives, honey, etc., GLEANINGS size.

M. C. Von Dorn, Omaha, Neb., sends us a neat 6-page price list of standard apiarian supplies.

James O. Facey, Tavistock, Ontario, Canada, has issued a 4-page price list of queens and apiarian supplies.

C. Weeks, Clifton, Tenn., sends out a nas al price list of Italian queens.

Andrew Burward, Merriam, Wis., send us card price list of honey, hives, and bees.

T. S. Hall, Kirby's Creek, Mo., sends us a very nice 24-page price list of Italian bees and apiarian supplies.

Henry E. Fitz, Lynn, Mass., sends us an 8-page price list relative to the Champion bee hive.

G. W. Putnam, Holland, Iowa, sends us a 4-page list of apiarian supplies.

A. M. Gander, Adrian, Mich., sends us an 8-page list of bee-keepers' supplies.

W. Ballantine, Sugo, O., sends us a 16-page price list of queens and apiarian supplies.

CONVENTION NOTICES.

The Bee-keepers' Association of Central Illinois will meet at Bloomington on July 15th, at 10 o'clock A. M.

Bloomington, Ill., April 30, 1885.

The Southern Ill. Bee-keepers' Convention will be held in DuQuoin, in Esp. Reed's office, on Wednesday, June 10, 1885, at 10 A. M. A cordial invitation is given to all who are interested in bees.

W. LITTLE, Pres. F. H. KENNEDY, Sec.

GLEANINGS AS AN ADVERTISING MEDIUM.

The notice "Bees for Sale," you gave free in GLEANINGS, brought in one week more customers than I had bees. Thanks.

Vincennes, Ind., May 18, 1885.

I think GLEANINGS is a splendid medium to advertise through, as I have sold every swarm I have. Will you please say to the bee-keeping fraternity that I have no more bees for sale?

Milford, Wis., May 23, 1885.

J. R. REED.

1885. VALLEY APIARY. 1885.

PLEASANT VALLEY APIARY.

PURE



BRED

ITALIAN AND ALBINO QUEENS.

Untested, after June 1st..... \$1 00
 " " " " per dozen..... 5 00
 Tested progeny, three-banded..... 2 00
 " Selected, young, large and light-colored..... 3 00
 Full colonies in Langstroth or Simplicity hives..... 8 00
 Nuclei (no queens), 2-frame, \$2.25; 3-frame..... 3 00
 Celebrated poplar sections, per M. (sample mailed free)..... 5 50

All orders filled promptly, and safe arrival and satisfaction guaranteed. Full colonies have tested queens; nucleus colonies (add the price of queen). The above strains are bred in separate apiaries, home containing over 70 full colonies, all pure Italians. My strains have stood the test of hardiness; have always wintered on summer stands, and have not lost a colony in the past 4 winters. Sample of my large, handsome, light-colored workers sent for 10 cents. Address

E. L. WESCOTT, Fair Haven, Rutland Co., Vt.

THE KIND OF BEES YOU NEED.

IF you want bees for business, get those that will work on red clover. Not a colony of this strain lost in wintering since they originated. Circular free.

F. BOOTHOWER,
 111tdb Galupville, Schoharie Co., N. Y.

BEES FOR SALE.

HYBRIDS AND BLACKS, strong colonies, on 9 wired L. frames, delivered on Miss. River boat at \$4.00 per colony.

H. B. SHAW,
 11-12-13d Gum Ridge, Jeff. Co., Miss.

FOR SALE.

I will sell a limited number of 3-frame nuclei with dollar queens, bred from good stock, during the month of June, for \$3.75 each. Size of frame, 10x 14 inches. I shall aim to give satisfaction. Write to postmaster at Stanley for reference. Make money-orders payable at Bluffton, Ohio. Address

11 JACOB GUISINGER, STANLEY, PUTNAM CO., OHIO.

BEES FOR SALE.

Italians in brood-chamber, L. hive..... \$7 00

Hybrids..... 6 00

One pound Italians..... 1 00

One pound hybrids..... 75

Safe arrival guaranteed.

TOM PHELPS,
 11d Sonora, Hardin Co., Ky.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column.

FOR SALE!

I WILL sell my apiary, consisting of 50 stands of Italians, honey-house, 20 acres of land, good for garden or fruit-growing, bog-raising, or cotton. For further particulars, address

ISAAC GUTTON, WACO, McLENNAN CO., TEX.

FOUNDATION MACHINES.

\$3.50, any size. Molded Idn., 40 to 50 cts. per pound. Italian queens in their purity, from the South, and of my own raising, untested, \$1.00; tested, \$2.00.

11d JOHN FARIS, TOWN HOUSE, SMYTH CO., VA.

THE UNDERSIGNED offers for sale very cheap a quantity of improved movable-comb hives, adapted to either outdoor or cellar wintering. For further particulars, address

11tdb ADIN A. SMITH, MOHAWK, HERR CO., N. Y.

Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they want to dispose of, we will insert notices free of charge, as below. We do this because there is hardly value enough to these queens to pay for buying them up and keeping them in stock; and yet it is often times quite an accommodation to those who can not afford higher priced ones.

QUEENS FOR SALE.—Hybrid queens, 50 cts. each; black queens, 25c each, from June 1 to Oct. 1. Safe arrival guaranteed. R. H. BAILEY, 7-11db P. O. Box 81, Ausable Forks, Essex Co., N. Y.

A few hybrid queens for 50 cents in June. Black queens, as long as we can buy Blackswarms, for \$1c. Also a limited number of tested Italians for \$1.25, 2d class. We will ship all in the Safe cage and guarantee safe arrival only. After tested queens are out, will fill orders with untested. S. A. DYKE & Co., Pomeroy, O.

I can spare a limited number of hybrid queens the coming summer, reared from best imported and select tested Italian queens. By return mail, in the Peet shipping-cage. Safe arrival guaranteed for 50c each. Address JOHN A. THORNTON, Lima, Adams Co., Ill.

I am superseding a lot of good hybrid queens, which I will ship to any one for 50c each; safe arrival guaranteed. It is a pity to kill them. J. W. WINDER, Carrollton, New Orleans, La.

I have now for sale 23 hybrid queens at 40c each. Safe arrival guaranteed. J. H. JOHNSON, Middaighs, Northam. Co., Pa.

We have about 30 hybrid queens to dispose of; will take 50 cts. each, or in lots of five, 40c each. JOHN NEBEL & SON, High Hill, Mont. Co., Mo.

I have a few good hybrid queens for sale at 50 cts. each; also a few blacks at 25 cts. Ready now. FRANK A. EATON, Bluffton, Ohio.

I have 20 hybrid queens that are daughters of an imported mother, that I wish to sell at 50c each. J. F. McCORD, Covington, Newton Co., Ga.

WYANDOTTE EGGS

Price reduced for June only, \$1.75 for 13 eggs; \$3.00 for 26. The eggs hatch well. Mr. T. J. Young, of Austin, Ark., reports 20 chicks hatched from 26 eggs that I sent April 10.

PURE ITALIAN QUEENS sent for \$2.00 each. Every thing guaranteed to arrive safely. Circulars free. J. C. BOWMAN, 11ld North Lima, Mahoning Co., O.

I HAVE a few dollar queens ready now. Untested, \$1.00; Warranted, \$1.25 each. Also 6 tested queens, \$2.00. L. HEINE, BELLMORE, QUEENS CO., N. Y.

DADANT'S FOUNDATION FACTORY, WHOLESALE and RETAIL. See advertisement in another column. 3btfdd

The North-Shade Apiary

Full colonies in either the Langstroth or the Gallup hives, for May delivery. Nuclei, Queens, and bees by the pound, for the season. Price List Free. 8-9rtd O. H. TOWNSEND, ALAMO, CAL. CO., MICH.

QUEENS! QUEENS!!

Untested Italian Queens, raised from pure mothers, \$1.00. Tested, \$1.75. I will guarantee satisfaction. Address A. B. JOHNSON, Elizabethtown, Bladen Co., N. C. 10rtdb

Bees Wanted to Fill Empty Hives.

Who will sell first swarms cheapest, ship before June 18th, and guarantee safe arrival? 11ld

J. G. LEHDE, Gardenville, Erie Co., N. Y.

JOB LOT OF WIRE CLOTH AT GREATLY REDUCED PRICES.

Such a brisk demand has sprung up for this, and our customers seem to be so much pleased with the goods, we have succeeded in getting another still larger lot, of one of the largest manufacturers of wire cloth in the world. Please bear in mind that the only way in which we can afford to sell it at the very low price of 1½ cts. per sq. ft. is by selling the entire piece just as it is put up. We have now in stock the following pieces. As fast as it is sold, each piece is crossed out, and the next issue will show what remains.

SOME OF THE USES TO WHICH THIS WIRE CLOTH CAN BE APPLIED.
This wire cloth is first quality in every respect, and is just the thing for covering doors and windows, to keep out flies; for covering bee-hives and cages for shipping bees; making sieves for sifting seeds, etc.
Number of Square Feet contained in each Roll Respectively.

Inches Wide.	No. of Rolls.
8	4 2 rolls of 57 s. f.
10	3 3 rolls of 75, 72, 70 s. f.
11	2 2 rolls, 80, 65 s. f.
12	3 3 rolls, 100 s. f. each.
16	2 2 rolls of 133 s. f. each.
20	4 4 rolls of 166 s. f.
22	6 3 rolls of 181, 1 of 169, 1 180, 1 of 250 s. f.
24	18 8 rolls of 209, 1 of 180, 3 of 190, 1 of 144 s. f.
36	74 24 rolls of 217, 15 of 216, 1 of 108, 3 of 106, 5 of 108, 1 of 195, 1 of 156, 2 of 210, 1 of 210 s. f.
38	68 28 rolls of 233, 5 of 234, 3 of 186, 1 of 117 s. f.
39	23 3 rolls of 250, 1 of 345, and 1 of 95 s. f.
42	10 2 rolls of 366, 1 of 133 s. f.
34	14 7 rolls of 281, 1 each of 240, 85, 255, 365, and 240 s. f.
36	12 1 roll of 300, 1 of 216 s. f.
38	42 28 rolls of 316, 3 of 285, 2 of 317, 1 each of 149, 632, 158 and 216 s. f.
40	4 1 roll of 131 s. f.
42	3 1 roll of 105, 1 of 245 s. f.
44	2 1 roll of 366, 1 of 348 s. f.
46	1 1 roll of 152 s. f.
48	12 11 rolls of 400, 1 of 300 s. f.

A. I. ROOT, Medina, Ohio.

AFTER 15 YEARS

Of very careful breeding, A. Snyder has produced a strain of bees known as

Snyder's Sweet-Clover Bees,

And has this day entered into partnership with a gentleman of "Means and ability." We now for the first time offer bees for sale. We are prepared to fill all orders for full colonies, nuclei, and queens. We shall breed pure Italians, they being best.



Untested queens, each \$1.60
Reared by natural swarming, each 1.50
Tested queens, each 2.00
Reared by natural swarming, each 3.00
Extra selected, of 1884, each 5.00

Mr. Tripp being a professional poultry fancier, we offer eggs for sale at \$2.00 per 13, \$3.50 for 26, from each of the following breeds:

LIGHT BRAHMAS, PLYMOUTH ROCKS,

WHITE LEGHORNS, BROWN LEGHORNS.

Having sweet-clover fields of our own (white variety), we offer seed for 16 cts. per lb. A small package sent with each queen ordered. Address

SNYDER & TRIPP,

Clarksville, Albany Co., N. Y.

\$1.25 PER POUND

For bees until June 20. The same for untested queens to go with bees. Safe arrival guaranteed.

16—T. P. ANDREWS, 210,

Farina, & Fayette Co., Ill.

WANTED.

ORDERS FOR BEST FOUNDATION.

I use the Given press; have dies for making sheets of foundation, Langstroth size, or 11x14. Can make 11x12. Wax worked for 10c per lb. Also sections, crates, etc., at low rates. I also have a few second-hand L. hives for sale cheap. Send for prices to

JOHN H. MARTIN,

11-12d HARTFORD, WASH. CO., NEW YORK.

Established 1855.
HEADQUARTERS
BEESWAX

We have constantly on hand a large stock of Domestic, Imported, and Refined Beeswax in original shape, which we offer to manufacturers of Comb Foundation at lowest prices. Write to us for prices, stating quantity wanted. Address

R. ECKERMANN & WILL,
 Beeswax Bleachers & Refiners. SYRACUSE, N. Y.
 N. B.—We have low freight rates to all points on quantities. 24-11db

MISSOURI.

THE ONLY MANUFACTURERS IN MISSOURI, of Apianian Implements. Send for Circular and Price List of our Hive with the **Reversible** Surplus arrangement for comb honey. Also **Smokers, Comb Foundation, Italian Queens, etc.** **KENNEDY & LEAHY,**
 P. O. Box 11. HIGGINSVILLE,
 Lafayette Co., Mo.

57fdb

THE SUCCESS FOUNDATION + FASTENER.

"Takes the cake; the fastening is a complete job, as I never saw it before." *Chas. F. Muth, Cin., O.*

Correspondence with supply dealers solicited.
Circulars free.
G. WITS & SON,
 9-11-13-15-17d West Jersey, Illinois.

IMPORTED QUEENS.

In April, - - - - -	11 francs in gold.
May and June, - - - - -	10 " " "
July and August, - - - - -	9 " " "
September and October, - - - - -	7 " " "

No order received for less than 8 queens. Queens which die in transit will be replaced only if sent back in a letter. **CHARLES BIANCONCINI & CO.,**
 3-13d Bologna, Italy.

BEE-KEEPERS' SUPPLIES, BEE-BOOKS, & LE CONTE PEAR-TREES FOR SALE.

One pear-tree sent postpaid for 40 cents.
 21fd **T. A. GUNN, Tallahoma, Tenn.**

BEE-KEEPERS' SUPPLIES

MANUFACTURERS OF

ONE-PIECE SECTIONS,

Made from Basswood.

HIVES OF ALL KINDS,

FOUNDATION, SMOKERS, ETC.

Send for Price List to

23rfd

Smith & Goodell, Successors to **Derr & Harris.**
ROCK FALLS, WHITESIDE CO., ILL.

\$65. CIRCULARS FREE. I will advise every reader of this advertisement to write at once for one of the above circulars. No man can afford to be without it. **Pure B. L. Eggs,** \$1 per 15. **D. E. BEST, Best's, Pa.** 11-13d

GOLDEN ITALIAN QUEENS.

Bees beautiful, gentle, and great honey-gatherers. Queens large and prolific; untested queens after May, \$1.00; tested, \$2.00. Extra tested to breed from, \$3.50. Send for circular to **DARROW & ROSS, LEBANON, ST. CLAIR CO., ILL.** 9-10-11-12d

SOMETHING NEW.

As I have greatly increased my facilities for manufacturing

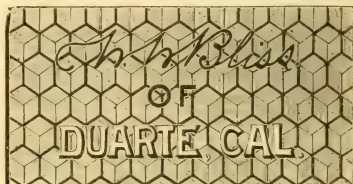
Apiary Supplies,

It will be to your advantage to send for price list before purchasing elsewhere. Cash paid for beeswax.

A. B. HOWE,
 21fdb Council Bluffs, Iowa.

OLD TYPE FOR SALE.

We have still on hand 75 lbs. of our old nonpareil type for sale. For a sample of it, see any number of GLEANINGS previous to May 15, 1884. Also 17 lbs. of Italic, if desired. As it is all packed, we can not divide either lot. The Roman includes 5 lbs. and over of "logotypes;" that is, the words *the, and, that, ing, tim, etc.*, are made all on one body, thus facilitating composition. We offer the lot at 20 cts. per lb. **A. I. ROOT, Medina, Ohio.**



Manufactures a

FIRST-CLASS ARTICLE FOR 15 AND 22c PER LB.

WRITE FOR PARTICULARS. 8-9-11d

TAR-HEEL+APIARIES.

1 No. Co. Queens.)	ABBOT L. SWINSON,	1 No. Co. Queens.)
2 Carniolans.)	Proprietor,	2 Carniolans.)
3 Italians.)	Goldsbere, Wayne Co., N. C.	3 Syrians.)

PRICE OF LAYING ITALIANS	May	June	July to Oct.
Untested queens, each.....	\$1 00	\$1 00	\$1 00
1/2 doz.....	6 00	5 00	5 00
Best tested queens, each.....	3 00	2 50	2 00
1/2 doz.....	15 00	12 00	11 00

The other races, one-fourth more. For nuclei, add 75 cts. for each L. frame of bees and brood to price of queen. Pure wax foundation, 50 cts. per lb.; 50 lbs. and over, 48 cts. 7-9-11d



ONE-PIECE SECTIONS A SPECIALTY.

We make five styles and all sizes, and keep other supplies. Sample hundred, 50 cts. Sample and circular free. Orders filled promptly. Five per cent off on orders until further notice. 71fd

B. WALKER & CO., CAPAC, ST. CLAIR CO., MICH.

FROM CHOICE IMPORTED QUEENS

I will, after June 21, furnish untested queens from my choice imported queen-mother, for \$1.00 each. Nucleus with queen, \$3.00. **J. L. HYDE, POMFRET, LANDING, CONN.** 9rfd

New Maple Sugar.

A limited supply, and some of it very nice. Prices, 8, 9, 10, and 11 c per lb., according to quality. One cent less, if ordered in lots of 100 lbs. or more. **A. I. ROOT, Medina, O.**

JOB LOT OF WIRE CLOTH

AT GREATLY REDUCED PRICES.

Such a brisk demand has sprung up for this, and our customers seem to be so much pleased with the goods, we have succeeded in getting another still larger lot, of one of the largest manufacturers of wire cloth in the world. Please bear in mind that the only way in which we can afford to sell it at the very low price of 1½ cts. per sq. ft. is by selling the entire piece just as it is put up. We have now in stock the following pieces. As fast as it is sold, each piece is crossed out, and the next issue will show what remains.

Inches Wide.	No. of Rolls.	SOME OF THE USES TO WHICH THIS WIRE CLOTH CAN BE APPLIED.	
		This wire cloth is first quality in every respect, and is just the thing for covering doors and windows, to keep out flies; for covering bee-hives and cages for shipping bees; making sieves for sifting seeds, etc.	Number of Square Feet contained in each Roll Respectively.
10	3	rolls of 75, 72, 70 s. f.	
12	2	rolls, 100 s. f. each.	
20	3	rolls of 166 s. f. each	
22	4	rolls of 181, 1 of 169 s. f.	
24	6	rolls of 200, 2 of 180, 1 of 108, and 1 of 120 s. f.	
26	17	rolls of 217, 39 of 216, 4 of 198, 2 of 195, 1 of 156, 2 of 151, 2 of 215, 1 of 210, and 1 of 151 s. f.	
28	20	rolls of 233, 2 of 234, 4 of 184, 1 of 106, and 1 of 97 s. f.	
32	2	rolls of 396, s. f.	
34	8	rolls of 281, 1 of 255, and 1 of 85 s. f.	
36	3	roll of 237, 1 of 93, and 1 of 106 s. f.	
38	27	rolls of 316, 3 of 285, 2 of 317, 1 each of 190, 632, 158, 136, and 319 s. f.	
40	1	roll of 130 s. f.	
42	2	roll of 105, 1 of 245 s. f.	
44	1	roll of 366, 1 of 348 s. f.	
46	1	roll of 122 s. f.	
48	12	rolls of 400, 1 of 200 s. f.	

A. I. ROOT, Medina, Ohio.

FULL POUND OF BEES, WITH WARRANTED ITALIAN QUEEN. \$2.50. Guarantee safe arrival. JOHN C. STEWART, Hopkins, Nodaway Co., Mo.

FROM June 15 to July 15th we will sell **ITALIAN BEES** at \$1.00 per pound; untested Italian queens at \$1.00 each. **DIXON & DILLON.**
12 Parrish, Franklin Co., Illinois.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column.

1885 ITALIAN QUEENS 1885

Untested Queens in March and April..... \$1 25
Afterward..... 1 00

J. S. TADLOCK,

56fdb LULING, CALDWELL CO., TEXAS.

Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they want to dispose of, we will insert notices free of charge, as below. We do this because there is hardly value enough to these queens to pay for buying them up and keeping them in stock; and yet it is oftentimes quite an accommodation to those who can not afford higher-priced ones.

I have a few very fine black queens; price 25 cts. each. **W. P. DAVIS, Goodman, Anson Co., N. C.**

I have a few hybrid queens, which I will take 50c each for. Ready now. **F. C. STEVENS, Moore's Hill, Dearborn Co., Ind.**

I can spare about one dozen hybrid queens at 50c each, and 2 black queens at 25c each. Safe arrival guaranteed. **ELIAS COLE, Ashley, Delaware Co., Ohio.**

I have 25 hybrid queens that I will sell for 50 cts. each. **D. N. MACKAY, Dry Creek, Lan. Co., S. C.**

I have a few choice hybrid queens which I will sell at 50c each. Untested Italians at \$1.00. Safe arrival guaranteed. **G. S. FOX, Mitchellville, Polk Co., Iowa.**

I have 20 hybrid queens one year old. I will take 40 cents each for them. **A. E. KIRKMAN, Maple Cypress, Craven Co., N. C.**

EXCHANGE DEPARTMENT.

Notices will be inserted under this head at one-half our usual rates. All ads intended for this department must not exceed 5 lines, and you must say you want your ad in this department, or we will not be responsible for any error.

WANTED.—To exchange eggs from single and rose comb Brown Leghorns, Plymouth Rocks, Light Brahmas, and Pekin ducks, for warranted Italian queens—any number up to 20 fowls, and as fine as any in the U. S. Write at once.
12-13d JAMES CRAIG, Mt. Meridian, Augusta Co., Va.

WANTED.—To exchange 2 knitting-machines (one Lamb, one Kimbell) bee-hives that have been used some; 50c and \$1.00 apiece, F. O. B., for beeswax, or offers foundation, 44 to 50c per lb., for cash or wax; wax worked on press on shares or for cash.
A. J. NORRIS,
11-12d Cedar Falls, Black Hawk Co., Iowa.

WANTED.—To exchange any quantity of pure Brown Leghorn eggs for Italian queens and bees.
HENRY C. SILVER,
Huntington, Huntington Co., Ind.

WANTED.—To exchange one ¼-size camera complete, with a partial photo outfit, and one good barber chair, for bees in L. or S. hives, or for empty hives and combs, foundation, or extractor.
ELIAS FOX, Hillsborough, Vernon Co., Wis.

WANTED.—To exchange a good Novelty printing-press, hand or foot power, chase 5x7, type-cases, 8 fonts type, brass rule, dashes, quads, spaces, leads, electro of queen, furniture, ink, etc., for a Barnes circular-saw machine, or a 10-inch fdm. mill.
M. W. SHEPHERD, Rochester, Lorain Co., Mo.

WANTED.—To exchange Italian queens for beeswax, fdm. mill, chaff hives, or offers. Will furnish untested queens at \$1.00 each; six for \$5.00. Warranted queens, \$1.25 each; six for \$6.25. Will allow 25c per pound for good yellow beeswax, delivered here. Circular free.
J. P. MOORE, Morgan, Pendleton Co., Ky.

WANTED.—To exchange a printing-press with type and furniture, size of chase 4½x6½, for bees by the pound, with untested Italian queens.
G. R. JOHNSON, Bartonsville, Wind. Co., Vt.

WANTED.—To sell, or exchange for bees, one 8x10 camera-box and 4x4 tube, complete, as good as new.
F. SHILLING, Jewett, Harrison Co., Ohio.

WANTED.—To exchange hives made up or in the flat, for bees, queens, and new honey. Send for price list free.
J. R. LANGLEY,
Georgetown, Ver. Co., Ill.

WANTED.—To exchange a 4000-lb. honey-vat, well made, and one of A. T. Andrews' writing-desks, for one-piece sections or Italian queens. Vat is worth \$35.00; desk worth \$20.00.
H. O. McELHANY, Vinton, Benton Co., Iowa.

WANTED.—To exchange foundation for bees; by the pound. Write
JOHN BIRD, Bradford, Chickasaw Co., Iowa.

FOUNDATION MACHINES.

\$3.50, any size. Molded fdm., 40 to 50 cts. per pound. Italian queens in their purity, from the South, and of my own raising, untested, \$1.00; tested, \$2.00.
12-13-14d JOHN FARIS, TOWN HOUSE, SMITH CO., VA.

FOR SALE. One of the Best Located Apiaries in the State of Iowa. 58 Colonies of ITALIAN BEES in *Splendid Condition*; just ready to commence swarming (June 6). **SPLENDID BEE-PASTURAGE.** Gambel's, White Clover, Red Clover, Basswood, and Goldenrod. Handsome new frame-house, 20 Acres of Land, 6 good milch cows, flag station, P. O. and store, 20 rods from the house. *Immediate possession given if desired.* Price \$2500, which includes 100 NEW HIVES all ready for bees, and 6000 SECTIONS with foundation, ready for surplus honey.

C. A. SAYRE.

12-13td Sargent, Floyd Co., Iowa.

DADANT'S FOUNDATION

is asserted by hundreds of practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sag, most regular in color, evenest, and neatest, of any that is made.

It is kept for sale by Messrs. A. H. Newman, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; Dougherty & McKee, Indianapolis, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Ezra Baer, Dixon, Lee Co., Ill.; E. S. Armstrong, Jerseyville, Ill.; H. Drum, Adelphi, O.; Arthur Todd, Germantown, Philadelphia, Pa.; E. Kretschmer, Coburg, Iowa; E. F. Smith, Smyrna, N. Y.; C. T. Dale, Mortonville, Ky.; Clark Johnson & Son, Covington, Ky.; King, Aspinwall & Co., 16 Thomas St., New York City; C. A. Graves, Birmingham, O.; M. J. Dickson, Hiawatha, Kan.; J. W. Porter, Charlottesville, Albemarle Co., Va.; E. R. Newcomb, Pleasant Valley, Dutchess Co., N. Y., and numerous other dealers.

Write for samples free, and price list of supplies, accompanied with **150 Complimentary and unsolicited testimonials**, from as many bee-keepers, in 1883. We guarantee every inch of our foundation equal to sample in every respect.

CHAS. DADANT & SON,

3b1fd **Hamilton, Hancock Co., Illinois.**

THE CANADIAN BEE JOURNAL.

WEEKLY, \$1.00 PER YEAR.

D. A. Jones & Co., Publishers, Beeton, Ont., Can.

The only bee journal printed in Canada, and containing much valuable and interesting matter each week from the pens of leading Canadian and United States bee keepers. Sample copy sent free on receipt of address. Printed on nice toned paper, and in a nice shape for binding, making in one year a volume of 832 pages. 3b1fd

\$1.00 Discount.

I will offer, for the next 30 days, Novice honey-extractors for Langstroth frames, \$6.00; for American frames, 6.00; usual price \$7.00. Send all orders to **GEO. W. BAKER, MILTON, WAYNE CO., IND.** 12-13d

I HAVE THEM. Pure Italian Queens, raised from the choicest stock, ready to mail now. Untested queens, \$1.00. Tested queens, 2.00. Send me your order, and send for my circular of queens and bees. **J. P. CONNELL**
9-20db Hillsboro, Hill Co., Texas.

FULL ITALIAN COLONY OF BEES, \$7.00 PER COLONY;

Two L. frames of bees and brood with queen, \$2.00.

J. E. HUNTINGTON,
Cotton Hill, Fayette Co., West Va.

I WILL SELL

Chaff hives all complete, with lower frames, for \$2.50; in flat, \$1.50; 2-story Simplicity, complete, \$1.25; in flat, 90c.

Comb Foundation, made from pure refined wax, 45c per lb. for heavy; 55 for light. Other supplies. Send for price list. **A. F. STAUFFER,**
7-12db Sterling, Whiteside Co., Ill.

THE KIND OF BEES YOU NEED.

IF you want bees for business, get those that will work on red clover. Not a colony of this strain lost in wintering since they originated. Circular free. **F. BOOTHILLER,**

11fd1b Galupville, Schoharie Co., N. Y.

BEEES FOR SALE.

HYBRIDS AND BLACKS, strong colonies, on 9 wired L. frames, delivered on Miss. River boat at \$4.00 per colony. **H. B. SHAW,**
11-12-13d Gum Ridge, Jeff. Co., Miss.

MISSOURI.

THE ONLY MANUFACTURERS IN MISSOURI, of Apiarian Implements. Send for Circular and Price List of our Hive with the **Reversible Surplus** arrangement for comb honey. Also **Smokers, Comb Foundation, Italian Queens, etc.** **KENNEDY & LEAHY,**
P. O. Box 11. HIGGINSVILLE,
Lafayette Co., Mo.

5tfd1b

POWERFUL COLONIES OF BEES

IN 10-FRAME SIMPLICITY HIVES,

For Only \$10. Try One.

READY TO SHIP AT ONCE.

E. F. BUSICK. - CHURCH CREEK, - DORCHESTER CO., MD.

SOMETHING NEW.

As I have greatly increased my facilities for manufacturing

Apiary Supplies,

It will be to your advantage to send for price list before purchasing elsewhere. Cash paid for bees-wax.

2tfd1b

A. B. HOWE,
Council Bluffs, Iowa.

OLD TYPE FOR SALE.

We have still on hand 76 lbs. of our old nonpareil type for sale. For a sample of it, see any number of GLEANINGS previous to May 15, 1884. Also 17 lbs. of Italic, if desired. As it is all packed, we can not divide either lot. The Roman includes 5 lbs. and over of "logotypes;" that is, the words *the, and, that, big, tion, etc.*, are made all on one body, thus facilitating composition. We offer the lot at 15 cts. per lb. **A. I. ROOT, Medina, Ohio.**

GOLDEN ITALIAN QUEENS.

Bees beautiful, gentle, and great honey-gatherers. Queens large and prolific; untested queens after May, \$1.00; tested, \$2.00. Extra tested to breed from, \$3.50. Send for circular to **9-10-11-12d**
BARROW & ROSS, LEBANON, ST. CLAIR CO., ILL

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL.
See advertisement in another column. 3b1fd

The North-Shade Apiary

Full colonies in either the Langstroth or the Galup hives. Prices just reduced. Nuclei, Queens, and bees by the pound, for the season. *Price List Free.* 8-9tfd **O. H. TOWNSEND, ALAMO, EAL. CO., MICH.**

QUEENS! QUEENS!!

Untested Italian Queens, raised from pure mothers, \$1.00. Tested, \$1.75. Three-frame nuclei (Simplicity frame) with untested, \$2.75. Safe arrival and satisfaction guaranteed.

Address **A. B. JOHNSON,**
10tfd1b Elizabethtown, Bladen Co., N. C.

WANTED.

ORDERS FOR BEST FOUNDATION.

I use the Given press; have dies for making sheets of foundation, Langstroth size, or 11x14. Can make 11x12. Wax worked for 10c per lb. Also sections, crates, etc., at low rates. I also have a few second-hand L. hives for sale cheap. Send for prices to

JOHN H. MARTIN,
11-12d HARTFORD, WASH. CO., NEW YORK.

THE UNDERSIGNED offers for sale very cheap a quantity of improved movable-comb hives, adapted to either outdoor or cellar wintering. For further particulars, address
11tfd1b **ADIN A. SMITH, MOHAWK, HERK CO., N. Y.**

PRICES REDUCED.

Comb foundation, equal to any in the market, at reduced prices. Send for samples and price list.

J. G. WHITTEN,

6tfdb

Genoa, Cayuga Co., N. Y.

Dunham & Vandervort Foundation

We have bought a large stock of choice yellow beeswax, and can furnish Dunham comb fdn. for brood comb, cut to any size, for 45c per lb.; thin and bright yellow fdn., for sections, at 50c per lb. Extra thin Vandervort fdn., 10 to 12 sq. feet to the lb., for 55c per lb. We guarantee our fdn. to be made of pure beeswax, and not to sag. Will work up wax for 10c per lb. for brood, and 15 and 20c per lb. for sections. Send for prices for 25 lbs. or more.

F. W. HOLMES,

5tfdb

Coopersville, Ottawa Co., Mich.

IF YOU WANT

A GOOD ONE-PIECE SECTION **CHEAP**

Send to us. Sample and Price List Free.

SMITH & SMITH, KENTON, HARDIN CO., OHIO

2tfdb

BINGHAM SMOKERS AND KNIVES.

BY MAIL, POSTPAID.

Doctor smoker (wide shield) 3 1/2 inch	\$2.00
Conqueror smoker (wide shield) 3	1.75
Large smoker (wide shield) 2 1/2	1.50
Extra smoker (wide shield) 2 1/2	1.25
Plain smoker	1.00
Little Wonder smoker	.65
Bingham & Hetherington Honex Knife, 2 inch	1.45

To sell again, apply for dozen or half dozen rates. Address

BINGHAM & HETHERINGTON, ABRONIA, MICH.

10tfdb

W. Z. HUTCHINSON,

ROGERSVILLE, GENESEE CO., MICH.,

Can furnish just as neat, white, smooth, and perfect dovetailed white-poplar sections as there are made. Send for sample and prices. Untested Italian queens, \$1.00 each. Tested queens, \$2.00 each. Make money orders payable at Flint. 9tfdb

BEES BY THE POUND.

24 Colonies to draw from.

1 pound \$1.00 | 3 pounds for \$2.50
Nucleus queens each. Safe arrival guaranteed. Will exchange for foundation at market prices.

W. R. WHITMAN,

11-12d

Nashville, Davidson Co., Tenn.

VANDERVORT COMB FOUNDATION MILLS.

Send for samples and reduced price list.

2tfdb

JNO. VANDERVORT, Laceyville, Pa.

**DADANT'S FOUNDATION FACTORY, WHOLE-
SALE AND RETAIL.** See advertisement in
another column. 3btfdb

ITALIAN QUEENS,

\$1.00; \$10.00 per dozen; tested, \$2.00. Safe arrival guaranteed. Circular free.

J. M. KILLOUGH & CO.,

10tfdb.

San Marcos, Hays Co., Tex.

SECTIONS.

Western headquarters for bee-men's supplies. Four-piece sections, and hives of every kind, a specialty. Flory's corner-clamps, etc. Orders for sections and clamps filled in a few hours' notice. Send for sample and prices.

M. R. MADARY,

9-20db

Box 172.

Fresno City, Cal.

Bee-Hives AND Sections!

NEW SHOP AND NEW MACHINERY.

The Largest Manufactory of Bee-Hives, Sections, etc., in the World.

Our Capacity now is a Carload of Goods Daily.

NOTICE.

By enlarging our factory last year we were put behind with our work so that by spring we were obliged to return many orders. Now we have ample stock ahead, and can fill orders promptly.

Write for our new price list for 1885.

G. B. LEWIS & CO.,

10tfdb

WATERTOWN, WISCONSIN.

BEECH'S QUEENS

Warranted Italian queens, from Imported mother May 1st, \$1.00; \$10.00 per doz. Choice select tested queens, \$3.50. I guarantee safe arrival and satisfaction.

G. A. BEECH,

7-12db

Box 24. Quitman, Nodaway Co., Mo.

BEESWAX.

Made into Given foundation on shares or for cash, on favorable terms. Best machinery, experienced hands. Western bee-keepers, please take notice; save freight or delay, and secure an article as good as any for all purposes.

7-12db

JOHN BIRD,
Bradford, Chickasaw Co., Iowa.

BE SURE

To send a postal card for our illustrated catalogue **APIARIAN** Before purchasing **SUPPLIES** elsewhere. It contains illustrations and descriptions of every thing new and desirable in an apiary.

AT THE LOWEST PRICES.

ITALIAN QUEENS AND BEES.

J. C. SAYLES,

1-12db

Hartford, Washington Co., Wis.

VIBRATING TELEPHONE.

Patent Applied for.

Gives splendid satisfaction. No exorbitant rental fee to pay—sold outright and guaranteed to work, month on trial, within its compass 2 miles, or more, if desired.

THE COST for private lines IS LESS than TWO MONTHS' RENTAL FEE to the expensive BELL TELEPHONE. THE VIBRATING TELEPHONE is the only PRACTICAL and RELIABLE non-electric Telephone made, and warranted to give satisfaction, or money refunded. Agents can make immense profits erecting lines and get all the work they can do. Territory given Agents in which they are protected. No previous experience required, as illustrated instructions show all about erecting lines. Where I have no agents, Telephones may be ordered direct for private use. Circulars and

H. T. JOHNSON, 102 S Division St., Buffalo, N. Y.



price list free. Mention this paper.

6-17db

HONEY COLUMN.

CITY MARKETS.

ST. LOUIS.—Honey.—Our honey market is very dull. No demand for any kind. Parties prefer strawberries for table use. *Beeswax* continues to gradually decline; hard to sell, and looks as if it would go lower; stock large. Last sales at 24c.

W. T. ANDERSON & CO.,
June 8, 1885. 104 N. Third St., St. Louis, Mo.

CLEVELAND.—Honey.—The market for honey has been very dull the past month, scarcely any thing doing, and stocks on hand standing still; what few sales are made are at former prices, 14c@15 for best 1-lb. sections of white; second quality does not sell. Extracted not wanted. *Beeswax*, 25c@28.

A. C. KENDEL,
June 10, 1885. 115 Ontario St., Cleveland, Ohio.

CHICAGO.—Honey.—There is at present very little demand for honey (this may be owing to cheapness of small fruits of all kinds). Sales are made at 10c@12½ per pound; extracted, 5c@7c. *Beeswax*, 22c@28.

H. A. BURNETT,
June 10, 1885. 161 So. Water St., Chicago, Ill.

NEW YORK.—Honey.—Since our last quotations there is no change in the honey market, still very dull. *Beeswax*, we quote at from 29½@31½c.

May 27, 1885. MCCAUL & HILDRETH BROS.,
34 Hudson Street, corner Duane St., New York.

MILWAUKEE.—Honey.—The honey market is very dull—very little demand for comb honey. In 1-lb. sections, values nominal, 12½@13c. Extracted in pails, 8c. *Beeswax*.—Some demand, 30c@35c. Values easy.

A. V. BISHOP,
May 25, 1885. 142 West Water St., Milwaukee, Wis.

KANSAS CITY.—Honey.—Demand light, and prices weak. We quote choice ½-lb. sections 15c@16c; 1-lb., 13c@14; 2-lb., 10c@11c. Extracted, 5c@7c., according to quality. We need some ½-lb. sections, and shall be pleased to hear from parties having any.

Beeswax, 25c@30c.
June 4, 1885. CLEMONS, CLOON & CO.,
Cor. Fourth & Walnut Sts., Kansas City, Mo.

CINCINNATI.—Honey.—There is no new feature in the market. Arrivals are plentiful, and at low figures, with almost no demand, excepting from our regular customers. Low prices are no inducement. Extracted honey ranges from 4½c@8c on arrival. Prices of comb honey are nominal, with a slow retail trade. *Beeswax*.—We find beeswax in a better retail and jobbing demand than ever, with good arrivals. Prices range from 22c@27c on arrival.

CHAS. F. MUTH,
S. E. Cor. Freeman and Central Avenues,
June 11, 1885. Cincinnati, Ohio.

DETROIT.—Honey.—The market is very dull; a good article is quoted at 10c@11 cents.

June 9, 1885. A. B. WEED,
Detroit, Mich.

THE A B C OF CARP CULTURE

JUST ISSUED.

A COMPLETE TREATISE In Regard to the German Food Carp,

INCLUDING PLANS AND SPECIFICATIONS, AND FULL-
EST INSTRUCTIONS FOR THE CONSTRUCTION OF
PONDS, AND EVERY THING PERTAINING TO THE
BUSINESS OF RAISING CARP FOR FOOD.

Illustrated by Many Fine Engravings.

Written by MILTON E. PEIRCE.

PRICE 35 CTS.; BY MAIL, 40 CTS.

A. I. ROOT, MEDINA, OHIO.



EXHIBITION WHITE LEGHORNS BRED BY KNAPP BROS., FABIUS, - NEW YORK.

Our Strain of this Variety Win Highest
Honors Everywhere.

LOOK! At MADISON SQUARE GARDEN, New York City, where the largest and grandest exhibition of poultry to be seen in America is annually held, our birds won in 1884, 1st, 2d and 3d Prizes on Breeding-Pens, 2d on Chicks, the Specials and Silver Cup for Best display; at State and County Fairs every first prize offered. Again in February, 1885, at the great New York Show, our birds were awarded FIRST PREMIUM MERIT on ALL entries, including Club's Special First Prize for Best Pair Chicks, for Best Breeding-Pen (averaging 95½, highest score 98), and the \$20 Special offered for Largest and Best Display in Leghorn Class, Brown or White, with 28 breeding-pens and 38 pairs in competition.

No better laying variety exists; all acknowledge this. Send and get the best breeding stock to be gotten in the world.

EGGS FOR HATCHING from our Prize-Winners, carefully packed in baskets, \$3 per 13, \$5 per 26. All orders will receive our personal attention and will give all good satisfaction.

This will not appear again. Send stamp for our 1885 circular giving further particulars, and price of fine chicks after Sept. 1. Box 74. 12d

Queens.

If you are in a hurry for them, give me an order; 25 laying now; 90c each; tested, \$1.50; fine stock. Can send by return mail in my improved Peet cage.

L. HEINE,
12d Bellmore, Queens Co., N. Y.

BEEES FOR SALE.

2, 3, or 4 Frame Nuclei, \$1.00 Each;
Untested Queens, \$1.00;
Full Colony on L. Frame, \$10.00.
Address RICHARD EDMUNDS,
12-16db BOX 222. GRAND CROSSING, COOK CO., ILL.

FOR SALE.

I want to sell 100 L. frames of comb, 9¼x17½, over one-half worker-comb. \$15.00 will buy them.
1111db J. W. BRADLEY, COLUMBIA, BOONE CO., MO.



Vol. XIII.

JUNE 15, 1885.

No. 12.

TERMS: \$1.00 PER ANNUM, IN ADVANCE; 2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00; 10 or more, 75 cts. each. Single Number, 10 cts. Additions to clubs may be made at club rates. Above are all to be sent to ONE POSTOFFICE.

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A. I. ROOT, MEDINA, OHIO.

Clubs to different postoffices, NOT LESS than 90 cts. each. Sent postpaid, in the U. S. and Canadas. To all other countries of the Universal Postal Union, 18c. per year extra. To all countries NOT of the U. P. U., 42c. per year extra.

AN INCREASE OF COLONIES TO PRESERVE COMBS.

A SUBJECT OF VERY GREAT IMPORTANCE INDEED TO MANY OF THE BEE-KEEPERS.

AFTER the great mortality of bees the past winter and spring, the question comes from almost every quarter, "What shall I do to preserve the combs, and how can I increase the few remaining colonies so they will again take all the combs?" As I propose to answer the first question by telling how to do the latter, I will dwell on the first only long enough to say, that if your bees are so reduced that they can not possibly be multiplied so as to use all the combs left by those which have died, the only thing to do is to fumigate them with burning sulphur every two or three weeks during warm weather, unless you have some moth-proof room in which you can place them, after fumigating them thoroughly twice, which should have two or three weeks intervening between the times, so as to allow all eggs to hatch. The hanging of combs two or more inches apart can not be depended upon, as I have had quite a number of combs destroyed in trying that plan.

The main question before us, then, is, how to increase the few remaining colonies as much and as early as possible. As nothing can be gained by trying to increase colonies till some of them have their hives full of bees and brood, I advise all to wait until at least *one* is strong, before trying my plan. When you have such a colony, and desire to proceed, turn to page 304 of GLEANINGS for May 1, and read carefully the plan I there give for forming a nucleus; for this is the system we are to adopt.

Besides the strong colony, it will be necessary to

have one other fair colony; and if any do not have such a one, I should advise the purchase of one, or a pound of bees with a queen. Having two colonies, such as is referred to, I proceed to the strongest and get in my box (as given on page 304) about a pint of bees, which in due time have given to them the queen from the weaker colony, when the bees and queen are left in the box until the next morning, and hived as I gave directions, taking the comb of brood from the weaker, and the frame of honey from the stronger, that are placed in the hive upon hiving them. The colony from which you took the queen is now allowed to build queen-cells; or you can use the Alley or other improved plans of getting queen-cells, whichever you prefer.

As soon as the first cell is sealed, you are to form another little colony, using the same queen as before to form it with; when in 48 hours I give the first cell which was sealed to the little colony the queen was removed from.

About this time I also make the third little colony, using bees each time from the strong one, and the same queen to form each colony with. In 48 hours I give a cell to the second little colony, and thus keep on forming colonies as long as I have cells or virgin queens to give them; for if the cells are not all used up when it is time for the first young queen to hatch, I cut all out but one (which should be left for that colony), and place them in a queen-nursery, so that I can use virgin queens instead of cells. If I was successful in getting a good lot of queen-cells, I have, at the time the last virgin queen is used, from ten to twelve colonies of bees, into which I now begin to place the combs I wish to keep the moths from. I forgot to say, that, after making the first little colony, I placed a comb in the

strong colony in place of the frame of honey taken from it; and that for each succeeding colony formed, this comb now having a few eggs in it, is taken out and another put in its place, while the frame of honey should be taken from those you wish to preserve from the moth. In putting the frames of combs in the little colonies I place them beyond the division-board until the queen gets to laying, when one by one they are placed in the brood-nest, as the colony gets strong enough so the queen will fill them with eggs.

The bees will care for the combs as regards keeping the moths from them, just as well beyond the division-board as they would if no division-board were there. When the last little colony is made I use nearly three times the bees in making it, and give, when hiving them, two or more frames of hatching brood, so that, in a week or so, I may again have a fair colony to rear queen-cells from; for at the expiration of about two weeks the same operation is to be repeated, and eight to ten more colonies formed.

Again in two or three weeks, or as soon as the original strong colony is in fine condition, more are formed; but as it grows later in the season, a quart or more of bees are taken to form the colony, instead of a pint. Finally, as fall draws on, the first-formed little colonies are strong enough to spare bees. At this time I take bees from three or four colonies, thereby getting bees enough to make a good full colony at once. By the above plan it is no trouble at all to build up a depopulated apiary again, especially if you are willing to feed liberally when honey is not coming in from the field; and I believe it is far cheaper than to buy bees by the pound, and queens to put with them, as many do.

G. M. DOOLITTLE.

Borodino, N. Y., June 1, 1885.

Friend D., I especially approve of your plan of getting at least one strong colony, before you begin forming nuclei. A powerful colony will bear drawing bees and brood from to a wonderful degree, without material injury; but we should be careful how we cripple colonies already weak, by untimely division or abstraction. Circumstances may make it needful to modify any rules that may be laid down; but I think any smart bee-keeper will be able to devise ways similar to the one you mention, to get his surplus combs under the control of the bees, even if he have but very few colonies to start with.

AN IMPROVEMENT IN REGARD TO MAKING FOUR-PIECE SECTIONS.

HOW TO DO SMOOTHER WORK WITH AN ORDINARY CIRCULAR SAW THAN CAN BE DONE BY THE AID OF THE SANDPAPERING MACHINE OR PLANER.

HOW slow is the march of progress! Hundreds of times I have invented cumbersome machinery for doing certain kinds of work, that I thought at the time were marvels of skill and ingenuity, and then found out some time afterward that the whole machine could be dispensed with entirely, and still do better work, and faster. I have seen this so many times, that, when something new had to be worked out, I have thought to myself, "Now

very likely when we get more acquainted with this business, *this* whole machine will be dispensed with entirely." For all that, the machine has to be built. The same thing is true the world over. Sitting down and waiting will not get us along any. We must roll up our sleeves, and push into the business before us; hew out something that will do the work, change it, simplify it as we go along, and when we get it to produce exactly the thing we want, then, but not before, we can begin substituting simple means for what before has been complicated.

Three months ago we printed a cut of a machine for making section boxes out of four pieces of wood. The machine has been running in our saw-room ever since it was gotten up, and has worked up short bits of basswood into enough nice sections to pay for itself several times over. The machine I allude to has a circular saw and sandpapering wheel together, as shown on page 158. Now hear the sequel:

To-day Mr. Gray brought me some pieces of wood sawed up for ends of wide frames. These wide frames are to hold only one tier of sections, so the pieces are only four or five inches long. They are too short to run through the planer practicably. We have formerly sawed them with a planer saw; but such a saw is too slow, as you all know. Well, these pieces were sawed with an ordinary ten-inch circular saw, and they were smoother on both sides than the work of the planer saw, or the planer or sandpapering machine.

What did they do it with? Why, they did it with an ordinary ten-inch saw, *filed without any set*. It is possible to use such a saw without any set, because the stuff is so short, and because the basswood was so thoroughly seasoned. To accomplish this, however, several things are necessary. First, as I have said before, use extra nice basswood lumber thoroughly seasoned. Second, a filer who can file a saw so it can be run safely without any set; that is, on short stuff, such as I have mentioned. Third, a mandrel that runs absolutely true. Every tooth of your saw must follow in an exact line the tooth that goes before it. Fourth, a man long accustomed to the business, for a sawyer.

After the saw had cut up a large pile of these sticks, it was put on to four-piece sections, both of basswood and white poplar, and it turned out the best work that has ever been made in our establishment. I asked our saw-filer if he could file another saw just like that; that is, so it could be run without set, and without a single tooth in the saw leaving a mark on the woodwork. He said he thought he could, and he is now at it.

I have given you this long description of the matter, because I think there are expert saw-filers and sawyers among our readers who can do this same thing. All you want in order to make beautiful sections, and make them rapidly, is a gang of saws to do the dovetailing, and a single rip saw to slice up the blocks.

Now, then, friends, to do this you must have perfect tools, and you must be expert

in their use, or it can not be done at all; but when you do reach the proficiency to be able to do it, you can do it faster than you can make the ungainly things that a good many of us have used and called sections. Perhaps I might add, that, in filing the saw the teeth are to be filed almost exactly straight across; but the filer first files every other tooth, then turns the saw over and files the remaining teeth. You will need to take a new saw that has never had the teeth set at all. Our ten-inch rip saws are just about the proper gauge; and when they come from the factory without injury or bruise, they are perfectly flat. May be your mandrel will have to be trued up before you can do it; but it will pay well to have a mandrel and saws kept in just this trim.

Since the above was written, our saw-filer has filed another saw, so as to do as well as the first; and we are not only using it on four-piece sections, but also on the one-piece, making, I think, finer sections than we ever made before, without the use of a planer at all. It takes an expert man at the saw-table, however. A new man would be pretty apt to get the sections thin at one end, or, worse still, get them to bowing. But I feel sure that almost any man who runs a circular saw can, by steady practice, learn to cut sections in the way I have mentioned. It is a great saving of lumber, saving of time, and a saving of expensive machinery. Another thing, a good many sections are spoiled by being put through the planer. All this loss will be saved. The man who files the saw must also be an expert; but I believe the friends who own saws can manage it if they try hard.

SHALL A BEE-JOURNAL BE CONNECTED WITH THE SUPPLY BUSINESS?

THE OPINION OF A CORRESPONDENT OF THE C. B. J.

WE extract the following from the *Canadian Bee-Journal* of June 3:

I think it is very fortunate that its editor [D. A. Jones] is in the supply business, as I maintain that we are benefited by this. GLEANINGS is a good example of this. I say that GLEANINGS is worth more than any other journal to-day to any American bee-keeper, if for no other reason than such articles as are useful to bee-keepers are continually being brought to their notice. It is all nonsense about a bee-journal being better, apart from a supply business. Its editor is thereby enabled to give better value for the price. In answer to the question of A. I. Root, when in a short editorial giving the reduction in glass, he says: "Now it seems to me, friends, it is a pretty good idea to have a bee-journal that is able to tell you twice a month all about the decline in price of such things as keepers are obliged to buy more or less. Don't you think so?" I reply, most decidedly. To persons living in Canada there is not so much advantage, but I have often thought that the bee-keepers of the United States should be very grateful to A. I. Root for what he has done and is doing in this way. I might say that every article I have purchased from him has been well worth the price charged. Of course, having to pay a heavy duty on some lines of goods is against us. Now I look upon the C. B. J. as I look upon GLEANINGS, that your position enables you to take the same place in Canada that A. I. Root does in the States, and I am indeed grateful that you have undertaken its publication.

We thank friend Deadman for his kind words; but I would suggest that, by

way of variety, we have one or more bee-journals not connected with the supply business; that is, providing there is sufficient demand for such a journal. No doubt there would be some advantages in having such a journal. But now may I be permitted to make a little protest of my own? When new bee-journals start up (and doubtless they will start, as they have started), will they please to bear in mind that it is neither courtesy nor policy to commence pecking at old established journals? Suppose you should attend an evening party, and you should commence right out, before all those people, abusing some one who is present. What would be thought of you, if you persisted in dragging your personal likes and dislikes into the presence of a well-bred company? You would probably be severely let alone, and you might possibly be shown the door, in some circles. Well, whatever appears in a public journal is, in one sense, before the people, and in a place where everybody is bound by all rules of etiquette to behave himself as becomes a gentleman. I have sometimes thought that the opinion seems to have obtained a lodging in some hearts, that a man might build himself or his journal up, by saying sneering and insulting things of those who had acquired at least a tolerably fair standing by years of at least tolerably fair service.

MORE SWINDLING NOTICES IN REGARD TO ADULTERATING HONEY.

ALSO SOMETHING ABOUT NEWSPAPER EDITORS THAT PERSIST IN PUBLISHING THESE FALSEHOODS.

WE clip the following from the *A. B. J.*: MISREPRESENTATIONS ABOUT HONEY.—Mr. A. F. Robson, Italy, N. Y., writes thus: I clip the following from the *Yates (N. Y.) County Chronicle*, and send it to the *Bee Journal* as a specimen of lying: "The Albany correspondent of the *Tribune* says: 'Some curious facts were revealed by the packers of canned goods in private conversation. You would not think the parings and cores of apples of any use, would you?' said one of the packers to a friend. He then continued: 'Well, a fruit-packing establishment makes use of every thing; like the pork-packing factories, which save every thing except the pig's grunt. When we are packing and drying apples, we have tons and tons of parings and cores. These we sell to the makers of jelly. All kinds of jellies are made of the material. You can not buy real currant jelly in the groceries. Every bit of it is soaked with some essence in it. But that is not the sole use of apple-parings. Occasionally we keep them so long that they can not be converted into jelly.' Then we sell them to the makers of strained honey. All the strained honey that you see in the market is made of it—there is not a bit of honey about it." What next? Does there not seem to be a demand for this kind of lies?

And so all this liquid honey to be found in the markets is made from apple-parings. is it? The above extract does not state clearly whether the statement was published in the *N. Y. Tribune* or not; but I should like to know for certain whether any of our readers have seen the above in the *New York Tribune*, or in any other newspaper. Well, instead of sitting down and folding our hands, and saying there is no help for it, we propose one means of helping the matter as follows: Keep a standing notice in the col-

umns of our bee-journals, of the names of newspapers that persist in giving place to these falsehoods. Hunt up the name of the reporter, if it is possible to get it, and give him all the publicity he wants. When the editor of any newspaper will correct the statement, and apologize for letting it go into his columns, then we will take his name out, and not before. If the bee-keepers of the world are not a very large body, they are at least large enough to let their influence be felt. Who is the reporter that furnished the above, and what paper besides the *Yates Co. Chronicle* has given place to it? I think we will fix it about this way: We will start a new department in GLEANINGS, with a head something like the following:

FALSE STATEMENTS IN REGARD TO THE HONEY BUSINESS OF OUR COUNTRY.

As a protection to our bee-keeping population, we propose in this department to publish the names of newspapers that persist in publishing false statements in regard to the purity of honey which we as beekeepers put on the market. When any paper will correct the matter publicly, with suitable apology, the name will be dropped. A copy of this article will be mailed to the editor of any paper giving place to such statements, with a written protest, before the name of the paper is given. After the lapse of a suitable time, if the matter is not corrected we will keep a standing notice, to warn the people at large that said paper does not scruple to give publicity to this class of falsehoods.

The more one reads the extract above, the more diabolical it sounds. Please notice: "After the apple-parings have been kept so long that they are spoiled, and won't make jelly, they are sold to the makers of *strained honey*." Furthermore, "All strained honey in the market" (I presume they mean liquid honey) "is made of" these same sour appleskins. Of course, this includes packages put up by the apiarists themselves; and we are told, with a great show of candor, there is not a bit of honey about it.

GLEANINGS AS AN ADVERTISING MEDIUM.

SOMETHING ABOUT PUTTING NEW GOODS IN OUR PRICE LIST BEFORE THEY HAVE BEEN PROVEN, ETC.

I WISH to say of GLEANINGS, that it is almost too good for advertising purposes. I inserted an advt., got answers from almost everybody, and as many orders as I could fill.

Bees are all in fine condition, and I did not lose any in wintering. I took my first comb honey May 15, which I think is very good for this locality. In the fall my bees bring in a quantity of beautiful dark-red honey, which is very thick, and has an excellent flavor. Can you tell me what it is made of?

Do you sell any reversing devices at the present time? I can not tell from GLEANINGS whether you do or not.

EDWARD S. LEA.

Brighton, Md., May 27, 1885.

Friend L., GLEANINGS is an excellent advertising medium for seasonable goods where the prices are reasonable or low; but some of the brethren have complained that they did not get a single application from their advertisement. The reason was, the advertisement was something not quite in our line, the price was high, or it was something behind the times, and not wanted by any-

body. As an illustration, one friend advertised some books on freemasonry. Nobody ever replied to his advertisement. Another advertised seed wheat. The price was rather high, and the kind of wheat was something the people did not know much about. I believe he had no answer. But as a rule, those who have advertised *bees* at low prices have been, like yourself, more than satisfied.—I can not give even a guess where the red honey came from, without tasting it. When you get some more, if you will let us know I will send you a wooden block in which to mail us a small portion.—We are selling the reversing device described and illustrated on page 157. We are selling a great many, and are waiting anxiously for reports from them. They are not yet in the price list, because I do not wish to put any thing in the price list until it has been pretty well tested by actual use, and at least a good many different people have decided that it is worthy of a place among the established "bee-fixings." The Heddon honey-board, Moore's crate for sections, Klimitz' queen-catcher, and quite a lot of other things are at present undergoing the ordeal of public opinion. If they decide them to be good during the present season, they will go into the price list.

NOTES AND QUERIES.

FIGHTING AND DEAD BEES IN FRONT OF A NEW SWARM.

I HAD a colony that cast a swarm on the 24th. It was an extra large swarm. They settled on a fence-rail. I hived them in the usual way, and ever since then they have been fighting. The ground around is covered with dead bees. The entrances are three feet apart—hives all alike, and painted white. What is the matter?

Hunter's Depot, Ky., May, 1885. R. B. BARNES.

[Friend B., your concluding words give the clue to the whole trouble. Three feet is not far enough apart to place hives; and if the hives are painted all alike, the trouble is likely to be still worse. They have probably got over their quarreling, and are all right by this time; but many bees will get into the wrong hives, and be lost, if you leave them as they are. If you face one about so as to point a different way, this would make some difference. Better put them as much as eight or ten feet apart, if you can conveniently.]

DOES THE SWARMING TELEPHONE INJURE BEES?

I am ashamed to ask any more questions, but can not listen any longer to that new telephone shooting my bees once a minute, without asking you if you think it brings one down at every stroke.

Sheboygan Falls, Wis., May 26. QUANDARY.

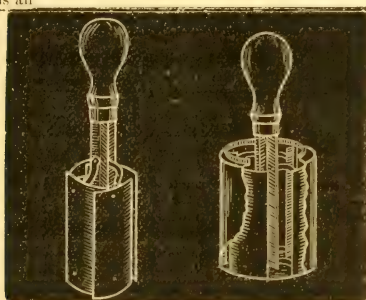
[Friend Q., the same thought came into my mind when we first used the swarming telephone; but upon going out and watching the bees as they bumped against the wire, I was satisfied that it did not hurt them materially; for after being knocked out of their course a little they flew along as if nothing had happened. Will some of the other friends make observations, and report? Bees often bump against blades of grass or stalks of timothy; but even if it knocks them down it does not seem to hurt them any. I would not have the wire so near the bees that they would strike it very much while at their regular work. If you can conveniently, raise it so high that a bee seldom strikes it unless the swarm is in the air]

HOME-MADE CANS FOR HONEY.

THE WAY OUR FRIEND MUTH-RASMUSSEN DOES IT.

AS shipping honey-cans made up is very expensive, on account of the bulk, we have for some time been doing quite a little trade with the friends away off, by sending them Jones cans in the flat. We extract the following article from the *Pacific Rural Press* of March 28, written by our friend Wm. Muth-Rasmussen:

The Jones honey-cans can be procured in the flat, most of them at one-half the cost of ready-made cans. Fifty of the sheets, forming the side of the cans, are stuck inside each other, making an almost solid block, little larger than a single can. Thus they take up very little room in shipping, and the freight charges are consequently considerably less than for ready-made cans. The bee-keeper may, at his leisure, put these cans together and keep them on hand for filling directly from the tank. Larger cans may of course be used for home storage, and the honey from them can be poured into a tank at any time, when it is desirable to fill a lot of the small cans. The only extra implement required is an



"EXPANSION TOOL."

Which consists of a center-piece with handle, to which are loosely riveted four pairs of U-shaped springs, holding four plates, or leaves. These leaves drop together when the handle is raised, but spread apart when the tool is set down on a flat, smooth surface. After putting the top, bottom, and side of a can together, the expansion tool is dropped through the hole in the top. By pressing on the handle, the center-piece is pushed to the bottom, and the four leaves, by the tension of the springs, are forced outward, pressing the edges of the sheet firmly against the flanges of the top and bottom. All the joints are now soldered in the usual manner, and the expansion tool removed by simply pulling the handle, which releases the tension on the springs and causes the leaves to drop close together. The cans are then tested by filling them with water and letting them stand a little while. If any of them leak it will be shown by the water, and it is far easier to mend the leak now than after the can has been filled with honey, as every old bee-keeper knows. In

FILLING THE CANS

They should be placed on a scale which will take off the tare, directly under the honey-gate of the tank; and if the honey is not too cold and thick, it will keep a person busy opening and closing the gate, removing and covering the filled cans and putting empty ones in their place. Previous to filling the cans, each cover should have a small pin-hole punched in the center by a sharp-pointed prick-punch. This is for letting out the air, when sealing the can.

SEALING.

I make my sealing-wax of equal parts of rosin and beeswax. Dark-colored beeswax answers the purpose just as well as light, as the rosin makes the mixture of a bright, yellow color. The wax and rosin are melted together in a can on the stove, and

a little at the time poured into another can, provided with a handle and lip, from which it is poured into the groove around the cover of the honey-can. As the air in the can gets warm, and expands under the influence of the hot sealing-wax, it would force its way out and make air-bubbles in this, if the cover were not provided with the above-mentioned air-hole. When the sealing-wax has cooled off, the air-hole is closed with a small drop of solder.

Finally the labels are put on with dextrine or paste, and the cans placed on shelves, or packed in boxes for shipment. The boxes should be marked with the size and number of the cans, and with the name and address of the producer, which can be done by means of stencil-plates, so that nothing remains to be done, before shipping, but to add the name and address of the consignee. If the honey is still liquid at the time of shipping, it will be necessary to mark the box "This Side Up." But if the honey is granulated in the cans, they will stand any amount of rough handling. To prevent the labels from injury by rubbing against each other, the cans should be tightly wedged together by wads of old newspapers; and if there are two or more tiers of cans in a box, a sheet of clean packing-paper should be placed between them.

THE SIZE OF CANS

Must depend partly on the public demand, partly on the price of the honey and of the cans. To avoid trouble in making change, it will be best to adopt such sizes as can be retailed at even 25, 50, or 75 cts. each. People seldom care to buy a larger quantity at the time, and generally have the cash ready which they wish to expend.

It is wonderful how readily, particularly the smaller cans, go off. At a recent "Indian fandango" in this neighborhood I sold in a couple of days 50 two-pound cans at 25 cents each. Old and young of the dusky tribe came with their two bits, and wanted a can of honey, and many were no doubt influenced by the knowledge that the can could be used again, when the honey was gone.

WM. MUTH-RASMUSSEN.

Independence, Cal., Feb. 1, 1885.

SHIPPING BEES WITHOUT WATER.

ALSO SOMETHING ABOUT SIMPLICITY HIVE-BODIES WITHOUT COVERS.

HOW do you fill those tin bottles with water in your bee shipping-cages? Why do you not sell Simplicity bee-hives without cover or bottoms? You can sell bodies with rim-pieces, or bodies without rim-pieces. You know the Simplicity bodies are used also largely for storing surplus combs away; and if we need them we can get a cheap bottom-board, and also a cheap cover by your tin sheets. A good many bee-keepers have use for a large number of bodies, but not for cover and bottom; we use, sometimes, these hives three stories high. What is the use, then, of the three covers, or bottom? If I were a supply-dealer I am sure I could sell a large number of these hive-bodies, and could do the bee-keepers a great favor.

H. M. MOYER.

Hill Church, Berks Co., Pa., May 30, 1885.

Friend M., we do not use tin bottles any more at all. We have not used any for two years. By many experiments we have satisfied ourselves that, while sometimes during an exceedingly dry spell a shipment is lost for want of water, there are more times when the water does more harm than good, with the best arrangements we have been able to get up. You can fill the bottles, however, by means of a common oil-can filled with water, or by holding them under a stream of water, falling say a foot or two. —In regard to the Simplicity bodies, why, bless your heart, we have been selling them for ten or fifteen years in just the way you

mention. If you examine any of our price lists for years past, you will find that it says the price of a body only is equal to the price of a cover; so that, in any of our tables, bodies will be half as much as a one-story hive with one cover.

A WOMAN'S EXPERIENCE IN COMMENCING TO KEEP BEES.

SOME OF HER PERPLEXITIES AS WELL AS SUCCESSSES.

I HAVE always thought I should like to take care of bees. We have been in the habit of buying honey of our neighbors every fall, and it seemed to me I would rather pay out money for bees, and raise my own honey. So about the middle of June last year I purchased a swarm of Italians, for which I paid \$9.00.

We live in the midst of a farming country, with plenty of fruit-blossoms, clover, and buckwheat, and near the shore of beautiful lake Chautauqua. I sent for the A B C book, and, not long after, for GLEANINGS. The more I learned about bees, the more I found there was to learn. I so much wished I could visit some good apiarist, and ask, oh so many questions! but there were none within 20 miles, and so I turned again and again to the A B C book.

My neighbors keep black bees, but they simply hive them when they swarm, and take up honey in the fall. If they half die through the winter, it is no more than they expected. I found I could not gain very much information from them, so I resolved to depend on what I could learn by reading, and my own common sense. Experience is often a dear teacher, but a pretty good one after all.

When I bought my bees, the brood-combs were nearly empty. They went right to work, however, and soon filled the brood-combs, but did not seem at all inclined to work in the sections. About the last of July they sent out a nice large swarm. Perhaps my experience in regard to the swarm may teach others who are just beginning, to be more watchful.

I am a farmer's wife, and do my own work. Previous to their swarming I had watched them pretty closely for two weeks. That day I had been unusually busy, and an occasional glance toward the hives was all the attention I gave them until about 6 P. M., when I went out to the hive. An air of listless inactivity about the front of the hive made my heart jump. I lifted the cover; about half the usual quantity of bees were dejectedly crawling around the combs, as though they had lost their best friend. My bees, my beautiful yellow bees, with the Italian queen, were gone! I went into the house and sat down. I was very tired, and this disappointment made me feel as though a good old-fashioned cry would be the next thing on the programme. My husband came in for the milk-pails. He had been very skeptical in regard to my ability to take care of the bees.

"What is the matter?"

"My bees are gone."

"Are you sure?"

"Yes."

"Let's go out and see; may be they are somewhere round on the trees."

"Oh, no! they must have swarmed this forenoon, and now it is almost night. They have gone to the woods long ago."

But he went out, and soon came back, saying, "They are on a low branch of an apple-tree, just back of the hen-house."

Then I jumped. I seized a sheet, and spread it in front of a hive already prepared. He sawed off the limb, and I shook them gently in front of the hive. Didn't I enjoy seeing those bees go on?

Well, they went to work upon their foundation, and built combs and filled with honey and brood. The other hive did not do much for a long time, then their queen began to lay, and she proved a hybrid. Soon cold weather came. I fed them sugar syrup a little in October. The last day of October I put them up snugly in chaff hives. Whenever there came a day warm enough, I would peek in to see if they were all right. I believe we had only one day in March when the mercury went above freezing. That day I looked in, found them all right, and could see they had some honey, but did not like to disturb them enough to see how much, and so for fear they might be getting out I tucked some candy in under the burlap across the frames. Then came day after day of zero weather and very little snow. I would go out and bank up the lower part of the hives with snow, and throw some lightly over the entrance.

At last spring came, and my two swarms came through, strong and well. My neighbors were complaining of heavy losses. One day in April I was alarmed by signs of dysentery around my Italian hive. I think they had found a heap of rotten pomace near a cider-mill not far off. I fed them some sugar syrup to coax them to stay at home, and in two or three days all signs of disease disappeared. I do not know whether that was the right thing to do or not.

I did not take off the chaff cushions till about the middle of May. On the 23d of May the Italian hive swarmed (this time I was watching), but they did not cluster, and soon went back into the hive.

The next day was rainy. On the 25th they came out again, and again went into the hive. Reading in the A B C book that bees would kill their queen if she did not swarm with them, I looked into the hive soon after they went back, to see if there was any trouble. The bees had gnawed through the burlap, and I found the queen and a few bees on top of the burlap. I thought I would cage her, and when they came out again put a new hive in the place of the old, and let her go in with them when they went back, or else I would divide the bees and give her part. I got my cage all ready; but I disliked to pick her up by her wings, lest she might be injured; so I let her crawl on to a feather, and two or three of the bees with her. I put them into the cage, as I supposed, and looked to see if she was there. The worker-bees were there, but she was not. I did not see her fly, I did not see her drop. Now, where was she? I looked long and carefully in the grass—no queen. Did she fly? and if so, would she find her way to the hive, or be lost? At night I looked the hive over carefully, but could find no queen. Did she fly and get lost, or make her way back to the hive, and the bees kill her?

I do not like hybrids. I always get stung when looking over that hive. They are doing good work, though, and the side sections are nearly full of nice honey.

I do not want my hybrid hive to swarm naturally, so now I send to you for two queens. I am out of pocket about \$25.00 for bees, hives, foundation,

queens, etc., and as yet have taken no honey, and received no income. I am not ready, however, to go into the column of Blasted Hopes. Indeed, I am quite confident I shall make a success of it in the end.

SARAH M. W. BENTLEY.

Fluvanna, N. Y., May 28, 1885.

My friend, I have had bees behave just as yours do, when the queen was clipped. Are you sure she is not a clipped queen? I am inclined to think she is in the hive all right; if not, you will find queen-cells within 24 or 48 hours. You could have divided the colony without any trouble, without purchasing any queens; but you will probably get along faster with a fertile queen in each part of the divided hive. If I were you I would be careful about paying out any more money until you get some in. Your husband and the other good people can be much quicker convinced of the possibilities with bees by seeing you market a good crop of honey, than by any thing you can possibly say to them. I can imagine just exactly how you felt, when your bees had swarmed, and you did not discover it until 6 o'clock in the afternoon; and I can tell something how your spirits arose when your husband announced that they were hanging on an apple-tree back of the poultry-house.

BEEES AND CIDER-MILLS.

HAS A BEE-KEEPER ANY CHANCE OF REDRESS BY LAW?

WE clip the following from the *Kansas Bee-keeper*. It is a portion of an answer given by our friend J. E. Pond to one of our bee-friends who claims he has lost bees to the value of \$1000 because of a cider-mill run by his neighbor:

A cider-mill would not be beneficial to an apiary, if near enough to it so that the bees could get to it. It might be beneficial to others, though, and probably would be to its owner.

A bee-keeper can not maintain an action against the owner of a cider-mill, erected on his own land. As to the question of damage, the cider-mill man might say the bees were a nuisance and damage to him. A man has a right to erect any thing on his land that is not an injury to his neighbors; that is to say, in the form of a nuisance. A cider-mill would not be considered a nuisance, and the courts would say that the bees must be shut up. I am aware that a cider-mill is rough on bees, but there is no help for it in law. The cases Mr. B. mentions are not parallel. A hog-pen is a nuisance, on account of the smell, and detrimental to health. The flooding of land by a dam is not at all parallel either, for there is a direct act done which causes damage. In the above I have given the legal status of the matter. Morally, my idea is much the same. I don't see why my neighbor should be kept from putting up a cider-mill on account of my bees. My course, if he should do so, would be to go to him and get him to allow me to put netting over the windows, or else try to get him to run his mill nights, and by force of moral suasion endeavor to get him to work as easy on the bees as he could. The matter of notice amounts to nothing. The only way an action could be maintained at law would be on the ground that the cider-mill man willfully and maliciously destroyed bees when he need not do so.

I want to emphasize the suggestion friend Pond makes, of getting wire netting to put over the doors and windows of cider-mills. I wonder if lawyers always give that same sort of advice to their clients. Christian lawyers most assuredly do. Please notice, that our bee-friend says he has lost over a thousand

dollars. Very likely the cider-mill man has been annoyed to a considerable extent, if he is not out of pocket more or less. Of course, he did not kill a thousand dollars' worth of bees, but the bee-man thinks he killed so many that his colonies could not winter over. We will suppose the cider-mill was \$100 damage instead of \$1000; now, it is not likely it would have required over \$10.00 outlay to have fixed that cider-mill so that a bee could not get a sip of cider. The wire netting would very likely be a considerable benefit to the mill-owner as well as the bee-owner; and it would certainly be a very bad neighbor who would not cheerfully assent to a proposition such as friend Pond suggests. Oh how easy just a little of the spirit of brotherly love would fix all these differences!

FRIEND PORTER'S COMMENTS ON BLANTON'S APIARY.

ADULTERATION OF SUGAR, ETC.

YOUR illustration of friend Blanton's apiary ought to be very suggestive to many. On "stilts" you may call it; but the ease with which a tall man can work among hives elevated one and a half feet from the ground, and with a flat roof, so that each hive is a table, ought to be apparent, if it is not. Years ago I adopted short posts well set with cross cleats on top to support my hives, and I could not be tempted now to go on to the ground again.

My covers are all 18½ x 26½ inches, and one of the most valuable improvements I ever made was to cover each with a sheet of tin, and paint it. Roofing tin 20 x 28 is the kind. Wood covers will not stand in this climate, let them be selected never so well, and painted. No more leaky covers and wet cushions and quilts below them. This for good Mrs. Axtell, whose losses will be regretted by many a reader of her great report for 1883.

Now, what can be handier than to have tables on each side? Opening a hive we place the upper story on one, and it is ready to receive the combs taken out, and can be made bee-tight by throwing a sheet over it—an important matter when bees are disposed to rob.

We always winter on summer stands here, and bees fly quite freely every pleasant winter's day. A burlap bag of chaff above the duck quilt affords such protection that no losses need be feared, provided the bees are really in a vital condition, with supplies of honey, a good queen, with young bees.

Robbing, following careless exposure or queenlessness, is a cause of more loss than any other one thing here.

Now a word in regard to the sugar-feeding. I should like to ask the experimenters, pro and con, and especially friend Doolittle, for his last letter calls this matter up, of what value are such experiments, if we are not to know what kind of sugar is fed? We are most of us delightfully ignorant of what we get now in buying "standard granulated sugar." I have been informed on good authority that all of our refined sugars are adulterated with grape sugar, or, rather, that they can be, and to a great extent are. Perhaps the low price of sugar, and the high price of corn, makes it less profitable now than formerly. If made free from chemical impurity, it may not poison, as glucose has, but it

is not sweet enough to take the place of good nectar. The point is, with this uncertainty as to its character, how can any such experiments be of definite value as bearing upon "the pollen theory"? Here we are at times greatly annoyed by the accumulations of pollen in the brood-combs. They appear to use a great quantity of it, and often clean out combs, I notice.

Our season has been very backward, and for four weeks prior to the 22d we had only one light rain. Virginia will not, it is thought, produce more than one-third of a crop of wheat, and about the same of hay and oats in consequence. Fruit-bloom was abundant, and the yellow-locust bloom was wonderfully profuse, and it has supplied an unusual amount of nice honey. A hive on the scales gained an average of 5 lbs. daily, and I have sections already capped; 90 colonies, and not a weak one among them. Ten were lost by starvation and robbing in wintering.

Now as to the markets, never before have prices been so low, and markets so dull. As producers we must be prepared to bear our share of the results of the general stagnation. While we have to sell cheap, we can buy low. It were useless to fold our hands and cease endeavor. There are no hard times when all that we need is so abundant. How different would it be if famine or pestilence should visit our fair land! Surely we can not expect to get 20 and 25 cents per pound for honey, when refined sugar is sold at 6 and 7c per lb. J. W. PORTER.

Charlottesville, Va., May 25, 1885.

Friend Porter, excuse me for objecting to any thing from so good an authority as yourself; but no one has as yet given satisfactory proof that granulated sugar can be adulterated, although it has been talked about at different times for years past. The cheap grades of brown sugar may be adulterated by grape sugar, and perhaps to some extent coffee A may also be adulterated; but granulated sugar is composed of dry hard crystals, and grape sugar can not be made to form crystals. If there is any thing that can be used to adulterate granulated sugar without detection, I have never heard of it. Is not this matter of adulteration of granulated sugar off from the same piece as the adulteration of comb honey?

PREVENTING AFTER-SWARMS.

HEDDON'S METHOD OF DOING IT.

WILL you please tell us, in GLEANINGS or otherwise, what is the Heddon method of preventing after-swarms, which we often see mentioned? ENQUIRER.

FRIEND HEDDON'S REPLY.

About eight days after a colony casts a prime swarm, the queen-cells, that were left behind to re-queen the old colony, begin to hatch. The first queen out instinctively scents danger from rival queens that will soon hatch from the other queen-cells; so she at once attempts to destroy her rivals by stinging them before they come out for even battle. The bees seem to dislike this act of depravity; and to postpone bloodshed they divide up, a part coming out with this queen (sometimes two or more queens) while the rest remain to await the hatching of the other cells. Thus we get after-

swarms. They seem to be Jack-at-a-pinch swarms, and not the fulfillment of natural desires, as are prime swarms.

Many times several of these after-swarms are cast, and it often seems that they never would cease as long as the queen-cells hold out, and the old colony could furnish workers to make up these little swarms. We have been advised to stop this after-swarming by clipping all the queen-cells but one, soon after the prime swarm issues. This method is a good one in theory; but in practice, bee-keepers have found that too often the cell left will fail to hatch. Oftener the bee-master fails to get all clipped but one, and out comes his second swarm when he is least expecting it.

Practical honey-producers are asking for something else, and here is the system of management that I adopted some years ago, and advocated, and one which friend Hutchinson and others have tried and reported "O. K."

Let us suppose that colony No. 8 swarms June 15th. With a non-erasive crayon we mark upon the hive, "O, June 15," and on the hive in which we put the swarm, "S, June 15." Thus we distinguish the old colony from the swarm at a glance, as we make these marks in large figures.

When we hive the swarm (always on full sheets of wired fdn.), we place it on the old stand, moving the old colony a few inches to the north (our hives front east), with its entrance turned northward, away from its swarm about 45°. As soon as the new colony is well at work, having their location well marked (say two days), we turn the old colony back parallel with the new one. Now both hives face east, sitting close beside each other. While each colony now recognizes its own hive, they are, as regards all other colonies, on one and the same stand.

The dates on the back ends of the hives indicate that second swarming may be looked for about June 23d. About two or three days before that date, and when the bees are well at work in the fields, we remove the old hive to a new location in another part of the apiary. This depopulates the old colony, giving the force to the new, leaving too few bees in the old one for the young "misses" to divide; and as they at once recognize this fact, they fight it out on the line of "the survival of the fittest."

It is supposable, that when the old colony swarmed it contained two or three tiers of surplus sections, more or less completed. It is well to at once place part of them on the swarm; and when the final removal of the old colony is made, the rest may also be placed there: in which case there will be no loss of surplus by robbing the old colony of so many bees—not if your hives are properly constructed, arranged, and manipulated.

The old colony contains no very young brood, and very many newly hatched bees, so there will be no loss of brood by this operation—not in swarming time, in this locality and latitude.

In six to ten days the old colony will have a fertile queen, as a rule, and become quite populous when surplus receptacles may be adjusted to it.

In my practice with this method, and the practice of many others who have used it, I am not aware of one instance of failure. The plan embraces the advantages of speed and certainty. It is done in half the time you are reading this article. There is no hunting for queens or queen-cells, or even opening

the hives. It needs only to be properly executed to be appreciated.

If we are going to produce cheap honey at a profit, all our operations must be executed by just such simple, practical, and successful methods. We must manipulate hives more and frames less. All our hives must be readily movable, and we must make every thing work as nearly automatic as possible, and turn out first-class surplus honey.

Dowagiac, Mich.

JAMES HEDDON.

Friend H., although I have never tried the above plan exactly, from what I know of bees I should call it sensible in every particular. Of course, it includes natural swarming, and getting swarms down from wherever they happen to cluster, and may be that is as well as we can do. Well, where natural swarming is permitted, I do not know of any better way of managing than the one you give. I should think, however, the old stock would sometimes swarm, and send out an after-swarm, in spite of the treatment it had received. Will those who have tested the above, please report? for *now* is the time when we want to avail ourselves of such simple plans if ever.

HONEY-EXTRACTORS

MADE SO AS TO REVERSE THE COMBS WHEN TURNING EITHER WAY.

THE following was furnished us by Mr. F. Rignon, of Turin, Italy, who translated it from Italian into French, and our proof-reader has rendered it into English. The engravings are copied by our engraver from drawings of the machine, which was exhibited at the Italian Exposition held at Turin, in 1884.

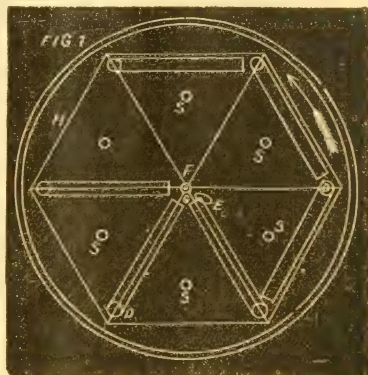
The principle of centrifugal force was first utilized in dyeing, by means of the hydro-extractor, and afterward applied with great success by the noble Chev. de Hruschka de Dolo, in extracting honey from the combs without pressing them, thereby rendering a great service to apiculture. But, like all human inventions, it was susceptible of improvement. M. le Chev. Vassallo, of Castiglione, Moretta, Piemont, Italy, made one of these improvements in what is known as the automatic honey-extractor, which he presented at the Italian General Exposition in Turin, in 1884.

Till recently, to extract honey with the ordinary extractors it was necessary to reverse the combs, during which operation the combs were more or less injured. The Vassallo extractor overcomes this inconvenience, as the operator, by means of the impetus which he gives to the machine, to the right or left, can present the side of the comb from which he wishes to extract the honey, the centrifugal motion accomplishing the result.

At the Florence Exposition, as early as 1874, Mr. Vassallo presented an outline of his system, and for six frames; and in spite of the imperfections which appeared, he was awarded a medal of bronze.

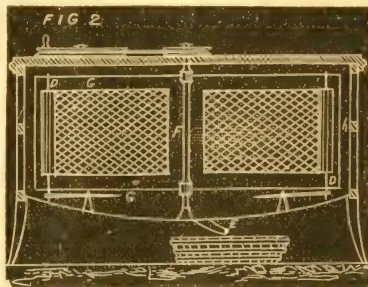
The extractor for six frames is composed, first, of an outer tank, or shell, resting on four legs so as to leave room for a smaller receptacle to receive the honey, which runs out of the spout E, Fig. 2. The dimensions of the outer tank are: Diameter, 85 centimeters, or about 34 inches; depth at the middle, 40 c.; depth at the edge, 33 c. Resting on the bot-

tom of the tank is an upright shaft, F, 44 c. high, which carries, on its upper end, a pulley 10 c. in diameter, driven by a larger one 24 c. in diameter, with a belt. This last pulley is provided with a crank, which can be extended even beyond the periphery of the pulley, so as to render more easy the rotation.



CROSS SECTION VIEW OF THE EXTRACTOR, LOOKING DOWN FROM ABOVE.

Diverging from the axis F, at top and bottom, are six arms, G, Fig. 2, 30 centimeters long, and 30 c. apart at their extremities. These arms are bound firmly together by six small vertical strips, h, Fig. 2, at the ends, and by 12 other horizontal pieces, as shown at H, Fig. 1. Under the six frames there are as many open receptacles, made of wire cloth, as will receive the contents of a frame. These cups hold an official Italian measure; i. e., 31 c. long, 4 wide, and 22 deep. These are suspended to a vertical shaft, D, Fig. 2. This latter shaft is distant 25 millimeters from the upright stick h.



CROSS-SECTION VIEW OF THE EXTRACTOR, LOOKING AT IT FROM THE SIDE.

Beneath these receptacles is a pointer, or needle-shaped piece, which, on turning the crank, is made to strike on the tip of the little cone, which serves to turn the arms to the right or left, according to the impulsion given to the shaft F. These wire-cloth receptacles should be slightly inclined toward the center, so that they may not stop while against or opposite the drum of the machine. When the gearing is not in motion the leaves come to their

place of their own accord, pointing toward the center. See cut. To get the proper inclination of the frames, the lower arms, G, should be 5 m. longer than the upper, and let there be as much inclination to the shaft D.

Our readers can readily reduce the French meter to inches by reckoning 100 centimeters as 40 inches, which is not exact, but sufficiently so for this purpose.

This matter of making extractors so that the combs may be reversed when the machine is turned the other way, is very old. Perhaps it would be difficult to say whether it came up first in our own country or across the water. Most of these machines have been, however, after a time deemed impracticable; although where there are large apiaries, perhaps the machine may be found a labor-saving investment. Within the past year or two the matter seems to have been getting into practicable shape, and I believe there are a number of our American bee-keepers now using the automatic honey-extractors. We shall be glad to hear reports from bee-men who have used them a season through. The hexagonal form shown above, and adopted by our friends across the water, seems to have some considerable advantages. If I am correct, a machine to hold six Langstroth combs need be little if any larger than one to hold four, the combs standing on end, of course. Another thing, for so large a machine no pulleys nor belting is needed, nor arrangement of any kind for multiplying the speed. A crank attached directly to the center-shaft will give all the speed desired, and especially would this be the case where the extractor holds six combs instead of four.

FLORIDA.

ITS ADVANTAGES AND DISADVANTAGES FOR BEE-KEEPERS.

THERE seems to be much general interest among bee-keepers regarding any information about this State; and as I have spent considerable of both time and money in gaining what information I could regarding its adaptability to bee culture, perhaps a statement of the little knowledge I have gathered together may save others the trouble and expense of going over the same ground.

I want to say, however, that this searching after bee-knowledge in Florida has been a wonderfully pleasant work to both my wife and myself, and I am afraid we should be tempted to make a life work of it if we were able to do so.

Florida is alone and unique among the States of our Union, as regards nearly all the essential conditions of climate, soil, productions, etc.; and on this account one can not hope to convey any thing like a correct impression of the conditions existing there, short of writing a book; and even then it will be almost impossible for any one to get any idea of what the State really is, without a residence there of some time. It is hard for a person to understand any thing that is so radically different in nearly all respects from any thing we have ever seen, as is Florida; and for this reason, the State is almost always either over or under estimated by nearly every one, especially by transient visitors or short-

time residents. It will be readily seen, that no short sketch can possibly give much information, except to those who are already somewhat familiar with the State.

Again, the State is nearly 400 miles in length, north and south; and being nearly or quite on the frost-line, gives to different sections that peculiar difference in climate that makes a much more radical difference in vegetation than is anywhere else in our country seen in such narrow limits. Added to this is the fact that it is only within the last four or five years since able, intelligent bee-keepers first began to study the honey-producing flora of the State, and it can readily be seen that no person is yet able to give much more than a glimpse of the actual honey resources of the State.

Of course, the first thing any one intending to keep bees in Florida needs to do is to become familiar with its flora, which varies much in different parts of the State, and still more so on the different kinds of land. A description of these different kinds of land can be found in any description of Florida, so I will name only the most important kinds in the order of their general value; viz., high hammock, low hammock, scrub hammock, high pine, low pine, swamp, bay heads, prairies, etc. On the hammocks grow live and swamp oaks, cabbage palmetto, magnolias, hickory, cedar, and a host of other kinds of timber of lesser value, and a large variety of tropical vines, shrubs, etc. On the pine lands grow pine, two or three kinds of oaks of little value; scrub, or saw palmetto, gallberry bushes, wild pennyroyal, etc. In the swamps we find cypress, maple, ash, gums, shrubs, vines, etc. In the bay heads, nearly the same as in swamps, with the addition of different varieties of bay-trees. On the prairies, but little vegetation of value, unless it may be willow; and on the salt marshes along the coast, black and red mangroves, and a small plant whose name and description I can not give, but am informed is of great value as a honey-plant.

The rule is the same in Florida as it is elsewhere, that, while there are many different kinds of plants that give some honey, the real surplus is obtained from a very limited number. So far as we yet know, the following are the most valuable honey trees and plants in Florida, in the order of their probable value: Black mangrove, decidedly the most valuable of all, is found only on the coasts, where its roots can be moistened by salt tide-water, its extreme northern habitat being only a few miles north of Mosquito Inlet, on the east coast, and about the same latitude on the west coast. I could not learn certainly how far south it grows, but think around the entire south coast of the State. Its season commences about the 5th of June, and lasts some eight or nine weeks, and yields very largely. Cabbage palmetto comes next in value, its time of flowering being from about June 1st until Aug 10th. Saw palmetto and the gallberry bush are next, their season being a little earlier than the first named. Wild pennyroyal, as the natives call it, is, I think, a very valuable plant; its season is from the 1st of January to the middle of March. Bay-trees are also said to be quite valuable, but I could learn nothing positive. I also heard of a species of palmetto bearing blue flowers, and said to grow on the extreme south-west coast, that is valuable, but I am inclined to think its existence is more of a myth than a reality.

In addition to the plants named, are many others of more or less value; but the above are, I think, the most valuable ones. Many have had high hopes of securing large crops of orange-blossom honey, but I do not think the orange-bloom will prove any more valuable than is our apple-bloom here, and probably not so much so. The quality of the honey varies as elsewhere, according to the source. That from mangrove stands at the head for quality as well as quantity, it being peculiarly clear and white in appearance—more so, if any thing, than any honey we obtain in the Northern States east of the Rockies. What distinctive flavor it has is neither so strong nor marked as either white-clover or linden honey; and while this may be an objection to some, to others it is otherwise. Many persons, myself among the number, prefer the mildest-flavored honey we can get; and to such I think mangrove honey may be preferred even to white-clover honey. Cabbage-palmetto honey is very similar to that from mangrove, but not quite its equal, I think. That from the other sources I have named will none of it be ranked as white honey, neither is it generally as dark as buckwheat honey.

Honey of all kinds in Florida, so far as I have observed, is thinner and of less body than our Northern honey; but this is easily corrected by the use of sun evaporators, these being easily operated in that land of sunshine.

Before I enter on the important subject of location, it may be well to give a sketch of our personal wanderings in different parts of Florida. The first winter we spent a few days at Lawley, in Bradford Co., near the center of the State. The land at that place is nearly flat pine lands, interspersed with small bay heads, and is the richest pine land I have seen in Florida. We passed the largest part of the winter, about ten weeks, some 16 miles nearly east of Tampa, in Hillsborough Co. This is a high pine-land country, interspersed with occasional very rich hammocks, also swamps and prairies. We stopped while there with a taxidermist whom I frequently accompanied on his hunting excursions in different directions in the surrounding country. I also went a few miles west of Tampa, to the shores of Old Tampa Bay, where Dr. J. M. Price, formerly of Buffalo Grove, Iowa, then owned some bees, although not at that time there in person. We were also at Manatee and Bradentown, on the Manatee River, and stopped one day at Cedar Keys.

The second winter we spent some time at the same places we did the first winter; also stopped a day or two in Jacksonville, the same time in St. Augustine, some four or five weeks at New Smyrna, where we met the first and only genuine bee-keepers we saw while in Florida! While stopping here we (wife and I) were so fortunate as to make part of a small party who chartered a five-ton sloop on which we cruised some 150 miles south, being the entire length of Hillsborough and Indian Rivers, to Jupiter Inlet and back again. These rivers, or, more properly, lagoons, run near the coast their entire length, in some places less than 200 feet separating their waters from those of the ocean. This trip lasted four weeks, and was the most enjoyable experience we had while in Florida.

Unfortunately our party were none of them interested in bees, except ourselves, and we couldn't ask them to stop and allow us to examine special localities as thoroughly as we wished to; yet we obtained a fair general idea of that part of the east

coast of Florida. We learned from personal observation, and from information obtained by a free use of the Yankee trait of asking questions, that the growth of mangrove quite abruptly terminated some 15 miles south of New Smyrna, occurring again, but not so profusely, at the head of Hillsborough Lagoon. A small fringe of mangrove grows in places along the edge of the Indian River, until we get to the mouth of the San Sebastian River, nearly opposite which commences the islands which form Indian-River Narrows, these islands being covered with mangrove, and extending from ten to fifteen miles along the river to nearly opposite Indian-River Inlet, near the site of old Fort Capron. But little mangrove is found from here until we pass the mouth of the St. Lucie River, and enter Jupiter Narrows, where is another collection of islands covered with mangrove. This is the last place north of Jupiter Inlet where mangrove is found in any great quantities, and we found it utterly impossible to learn any thing about the growth of this plant south of that point.

There are two species of mangrove, the red and the black, both growing in very similar situations, only the black yielding honey. Prof. Cook says this is not a true mangrove; but as that is the only name it is commonly known by, I will continue to call it that. The red variety usually grows on the edges of the islands, with its roots partly in the water, while the black grows more in the center of the islands. This fact of the black being partially hidden behind a fringe of the red, prevented me from learning for certain how large an amount of black mangrove there actually is on the islands of Indian River.

This fact of there being two kinds of mangrove, both growing in the same localities, and somewhat resembling each other, entirely prevented our obtaining any information of value in reference to the growth of this valuable honey-plant on the south-east, south, and south-west coasts of Florida, although diligent inquiries were made of every one we met, who was familiar with those sections. Every one reported immense quantities of mangroves in different locations around the coast, but not a single person could say whether they were the red or black varieties. By far the largest amount of mangrove in Florida will, I think, be found on the south-west coast between Charlotte Harbor and Cape Sable; but whether there is a single stick of the black variety among it all is more than I could learn.

Mr. Hart, of New Smyrna, whom all your readers know of, told me that he hoped to spend a winter in the near future in making a cruise around the Florida coast from his place to Charlotte Harbor, investigating the honey resources of that section. When he does this we can depend on reliable information from a section which may prove almost a second California. I also hope to be able to make a similar trip some time. In all I may say when speaking of Florida as a whole, I do not include the extreme north-western part of the State. For reasons not necessary to detail, I have never tried to obtain any particular information about that section.

I believe that nearly or quite all experienced bee-keepers who have had the best opportunities for getting posted about Florida have come to the conclusion, that, to obtain large paying crops of honey year after year, one must be located within reach

of mangrove. For queen-rearing I should prefer the interior part of the State, I think. Good mangrove locations are, so far as we yet know, few in number, and of small extent each. That at New Smyrna, already quite fully occupied, extends in a narrow line up and down the coast not to exceed 25 miles, while the other three or four known locations between that point and Jupiter Inlet are of still less extent each. The probabilities, however, are that large numbers of excellent locations exist in the unknown regions of the State—unknown at least so far as their honey resources are concerned. It will thus be seen that, while those bee-keepers who are located in New Smyrna have met with splendid success, the chances for indefinitely multiplying those successes are as yet a problem of the future.

Williamstown, Iowa.

O. O. POPPLETON.

Concluded in next number.

A FEW MORE WORDS IN REGARD TO HIBERNATION.

PROF. COOK ALSO TALKS TO US ABOUT "TONICS" FOR BEE-KEEPERS.

MR. EDITOR:—The article from Bro. Clarke surely calls for a reply from me. In my cards on which I have notes, I find this: "Kirby says bees do not hibernate." Reference is given to *Ency. Brit.*, and to his Introduction. I did not look up the reference, but quoted as given in GLEANINGS for May 15th.

In Kirby and Spence's Introduction, Vol. II., p. 446, we find this: "Lastly, there are some insects which do not seem ever to be torpid, as . . . and the common hive-bee." This reference is where I presume I got my reference, as in *Ency. Brit.* it is stated as Bro. Clarke notes: "Bees probably never hibernate."

In the Introduction it is stated, on the authority of Huber, that bees are never torpid in winter, "but keep themselves in motion to preserve their heat." He also quotes Swammerdam, Bonnet, and John Hunter, to the same effect, while Reaumur is quoted as arguing that bees are torpid in winter, and take no food. In summing up, it is stated that "this usually most accurate of observers (Reaumur) has in the present instance been led into error, chiefly, it is probable, from the clustering of bees in the hive in cold weather; but which, instead of being, as he conceived, an indication of torpidity, would seem to be intended, as Huber asserts, as a preservative against the benumbing effects of cold." Kirby closes by saying, "Bees, then, do not appear to pass the winter in a state of torpidity in our climate, and probably not in any other."

Thus while I was unfortunate in my reference, I do not think I misquoted Kirby. Very likely, Mr. Editor, you will think enough has been said, and will be quite right in so thinking; but I wish to add, that, as I understand hibernation, it is torpor, attended with fasting, and is not thrown off by still greater cold. Now, I find bees always have a specific heat much above the outward temperature in winter; that in coldest weather I have noticed that they are constantly moving, and that a sudden chill in the outside temperature, instead of deepening their torpor, causes them to become more active, to eat more, and induces a rise in the temperature of the hive, as shown by a marked rise of temperature

in the thermometer, the bulb of which is in the cluster.

IS IT BEST TO HAVE GLEANINGS "ALL BEES"?

May I add my say in the criticisms of my friend Hutchinson as to GLEANINGS? Our physicians sometimes give iron as a tonic in case of pale, frail patients. They note the return of color, vivacity, and strength, and bless God that iron has a place in therapeutics.

Now, Mr. Editor, I take it that you have found this iron tonic, else why the astonishing growth and vigor of GLEANINGS? The doctor has proved that his patient needs the iron, so you have proved that the bee-public craves more than bread alone. Were I asked to explain the thrift and vigor of GLEANINGS, I should say it was the vigor and earnestness of the editor, aided by the very variety which fills its pages, and which is occasionally—very rarely—complained of.

I was talking to a subscriber to GLEANINGS a short time since about another bee-paper of which he knew nothing. Said I, "If you are so anxious to know its character, why not swap off and take it for a year?" He quickly replied, "Never! I will never give up GLEANINGS! but I will take the other also."

It were very foolish, I think, when a doctor finds the iron tonic, and proves its value, to throw it away; and just as foolish for you to let loose one jot of that which has given you such a hold on the bee-keeping world. My advice, then, is, don't omit the tonic of variety, which has helped to broaden every reader of GLEANINGS.

A. J. COOK.

Agricultural College, Mich.

Thank you for your kind words, friend Cook. In the matter of hibernation, it seems to me it is more a difference of opinion in regard to definition of terms than a difference of opinion in regard to the way bees winter. But in regard to your concluding kind words, it only makes me fear that I am not deserving of all you say. May God help me, and give me wisdom in choosing wisely, where there is so much going on all around us to choose from.

A SIMPLE WAY OF ITALIANIZING.

SOME OF THE REASONS WHY THE SIMPLEST WAY IS NOT ALWAYS THE MOST PROFITABLE.

WHERE I to have two colonies of bees (one of Italian and one of black), each with a good supply of brood, and I kill the queen of the blacks, and give them the entire brood of the Italians, and the Italians the brood of the blacks, would I Italianize both?

Osage, Ill., May, 1885.

C. M. THORNTON.

Yes, my friend, your colonies would both be Italians in a short space of time; that is, providing your black stock raised a queen from the Italian brood, which they would without much doubt. The plan as you suggest it is a very simple one, but it is too wasteful to be generally practiced, for we have a colony of bees wasting their time in perhaps the best part of the season, while they could make a queen-cell and wait for the queen to get to laying. Every day counts with bees—especially during a honey yield. Now, let us see how you can improve upon the plan by saving time. You can take a couple of combs of brood from your Italian

comb, and a pound of bees from your black colony, and they will raise a queen and get her to laying just as well as to keep the whole stock employed in doing this. After the queen gets to laying, remove your black queen, and take the queen from the nucleus, and introduce to them. This ought not to take over 48 hours, while by your plan it would take two or three weeks. It is always poor economy to keep a strong colony of bees waiting for a queen to be raised in the usual way. This is where the advantage of having nuclei comes in. Whenever a queen is lost, or one is to be replaced, we should be able to get a queen from some nucleus or some weak colony. After-swarms often furnish an extra queen when wanted, and on this account I think it is well to hive and care for every after-swarm, although it contains no more than a pint of bees. If you can not get a laying queen, a queen-cell makes us usually a full week ahead, and we can often get queen-cells from some colony that happens to be raising cells, or some colony that is preparing to swarm.

ANOTHER REASON WHY IT PAYS TO TAKE A BEE-JOURNAL.

KEEPING BEES AS A SPECIALTY, OR HAVING OTHER KINDS OF BUSINESS.

ABOUT the first of last December I was tempted, by seeing a copy of GLEANINGS, to send you my subscription for same, and now I can not see how I did without it or how you can afford to furnish such a practical journal for the price. But while you have gained my future subscription, you have lost my order for sections, as I find by a manufacturer's advertisement in GLEANINGS that I can buy close at home, and yet I had to go to Ohio to find out that fact.

Of my 40 stands, but 30 produced surplus honey; but the 30 produced over 1250 lbs. comb honey (we extract none), in boxes holding 12 to 15 lbs., worth 12½ cts. per lb., or \$155. My total expense for surplus boxes, marketing, etc., I estimated at about \$30.00; net profit, about \$125.

I did not expend over a week in attending to my bees all summer; but I gave them attention at the proper time. I laid down the grain-cradle in the midst of harvest, to make and put on extra surplus boxes, so as to keep the busy little fellows at work, and right faithfully they did it, rolling in the nectar sweet while I was binding the golden sheaves.

You see, I am a one horse farmer, and I also grow fruits, strawberries, grapes, some wheat, corn, hay, and garden truck for sale. I believe in mixed husbandry. During the winter I am engaged in teaching, one mile from my home. I am busy every day in the year except Sunday, and partly that day also, as I have a class in our Sabbath-school. I don't know any thing about hard times, as I keep my hands and brain busy, work hard, sleep soundly, keep a clear conscience, follow the golden rule, drink no intoxicating drinks, neither smoke nor chew, keep my barn well filled, have a wife well willed, and an only son, an excellent lad who is a young bee-keeper.

For some years I used the American hive with its sunken top, but found that a nuisance, and cut them all down to a level top.

My neighbors wonder how I get so much more honey than they. Why, by simply keeping them at work while the honey lasts. When the honey season is over, no use to give empty cases. I always keep an empty honey-case on top of the brood-chamber, in winter time, for upward ventilation, as I find that, where the brood-chamber is covered tightly, the combs get quite moldy toward spring. I think my bees have paid me more than 100 per cent per year since I have had them, but I don't think it will pay nine out of ten who engage in bee-keeping to depend on bees entirely for a livelihood. I never calculate on any net proceeds from my bees until I have the honey crop stored. As an adjunct to other things I feel sure it will pay those who give them proper attention. Count me as a subscriber to GLEANINGS as long as I keep bees.

Green Spring Furnace, Md. E. G. KINSELL.

JONES BEE-ENTRANCE GUARD.

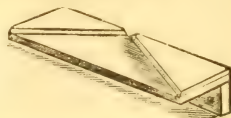
DIRECTIONS FOR USE, AFTER SEVERAL YEARS' EXPERIENCE.

THIS device is to be placed over the entrance of the hive in such a way that the projecting pieces of zinc, which look like teeth, rest directly on the bottom-board. These teeth-like projections will be easily recognized in the cut below, although we make them with a square wooden block at each end now, instead of having them all of metal, as shown in the picture. The implement had



ENTRANCE-GUARD FOR SEPARATING DRONES FROM WORKERS.

better be fastened in place by a couple of screws or light nails. If used on a chaff hive you will have to fasten a little strip of board just below the entrance; for the portico hive, it rests on the alighting-board just as it is. To use it on a Simplicity hive, you will need the alighting-board shown below.



ALIGHTING-BOARD FOR SIMPLICITY HIVE.

Cut away the outside corners of each of the three corner-blocks until the entrance-guard rests on the alighting-board. Fasten it as before, then move the hive forward until the front end of the hive strikes the entrance-guard. If any other hive than those mentioned, modify according to circumstances, as per directions above. After having it fixed over the entrance, perhaps the simplest way to dispose of all the drones is to remove all the combs from the hive, shake off bees, queen, drones, and all on the ground in front of the hive. Put back the combs and replace the cover. The worker-

bees will crawl through the slots in the zinc, but the drones and queen will be left outside. Pick up the queen and put her in the hive. Let the drones all remain until next morning, and you will find them in a compact cluster. Feed them to the chickens, or destroy them as you choose. The arrangement is supposed to prevent swarming, by keeping the queen in the hive, so that the bees will come back as soon as they discover she is not with them. I believe it does not always work just right for this purpose; but for disposing of drones, there is no trouble. Where you want to restrain queens, the alighting-board on which the trap rests must be smooth and flat, or the queen will squeeze out where there is a little irregularity in the wood.

The price of the above drone-trap is 10 cts.; 10, 75 cts.; 100, \$5.00. If wanted by mail, add 2 cts. each extra.

RECENT DEVELOPMENTS.

And Suggestions and Queries Particularly Pertaining to the Season.

A PROMISE OF MORE HONEY-DEW HONEY.

I NOTICED this morning more honey-dew than I ever saw before in all my life put together; it is actually beyond all human calculation. If I had not seen it myself I could scarcely have believed it to be possible, for all the trees appear to be one entire coat of honey-dew all over the leaves, every part and particle being smeared with it.

J. Y. McCracken.

Rosebud, Ala., May 15, 1885.

SORGHUM FOR BUILDING UP IN THE SPRING AND SUMMER.

Is good sorghum safe and good for feed at night, to build up colonies? I can furnish it at 40 cts. per gallon.

J. C. STEWART.

Hopkins, Mo., May 9, 1885.

Friend S., you can feed sorghum or any thing else, providing the bees will take it; and during a dearth, when they are not gathering stores they will sometimes take it with great avidity. Be careful, however, that it is all used up for brood-rearing, or it might get into your honey for winter stores, or, worse still, your honey for market. Several years ago, when there was a dearth of honey between fruit-bloom and white clover, we fed several barrels of cheap maple sugar, so poor that bees would not even touch it at other times.

COMMON BEES BEST AT SOME TIMES, AND ITALIANS AT SOME OTHER TIMES.

I wintered my bees outdoors, packed in chaff; had 78 colonies in the fall; 25 of these were artificial, not much better than nuclei. I have 68 left. I should like to have friend Doolittle's opinion on the working qualities of the black and Italian bees. I think the Italians are best on basswood and thistle; the black, on raspberry and buckwheat, and about equal on white clover.

F. ROULO.

Portville, Catt. Co., N. Y.

Very likely you are at least partially right, friend R. This I do know: That the black bees will sometimes gather more dark

buckwheat honey than the Italians, although I can not say that I ever saw the blacks busy when the Italians were idle.

HONEY FROM THE WILLOW.

Bees are doing the best that I ever saw them at this time of year. I transferred 9 colonies into Langstroth frames, and had to extract the honey before I could do any thing with them. That was about ten days ago, and to-day all the hives are full of honey, bees, and brood, and four of them are working in the upper story. To-day they are working on willow, and they drop when they come in. Bees wintered very badly in this section; at least 90 per cent of them died.

F. W. MOATS.

The Bend, DeLancey Co., Ohio.

WHICH WAY SHALL THE ENTRANCE OF THE HIVE FACE?

The A B C tells us to set the hive of bees, when setting out, square with the points of the compass. Will you please let me know to which point of the compass the front of the hive should face?

P. K. PEREGRINE.

Amiret, Lyon Co., Minn., May 21, 1885.

Friend P., I can not discover that it makes any material difference which way the hives face. I have seen times in the spring when it seemed desirable to have them front to the south; but during extremely hot weather, the opposite direction would be somewhat desirable. All things considered, I think I should pay no attention to it. My remarks in the A B C were to the effect that you should have some regular system in placing your hives, that they might not be so disorderly arranged as to be painful to one who likes order. It is a bad plan to change the way the hive faces during the swarming season, for the bees are greatly annoyed and hindered by such a proceeding.

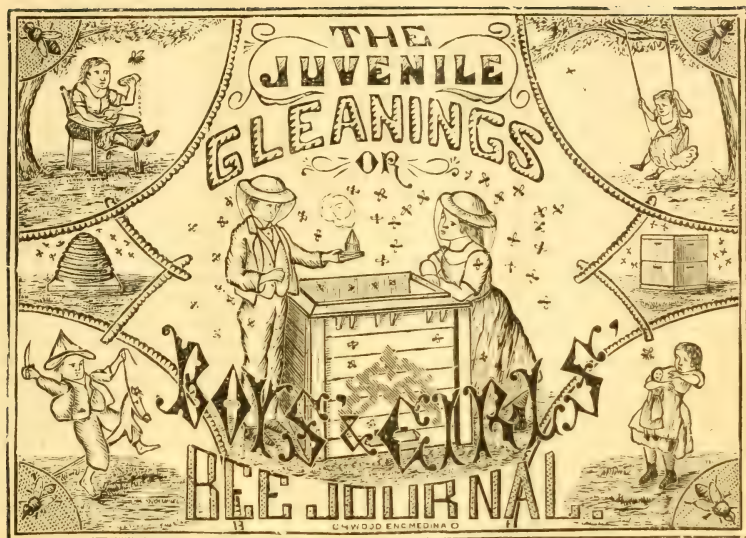
HOW MANY FRAMES ARE NEEDED TO CONTAIN ALL THE BROOD?

This day my bees are gathering fruit-bloom honey by the loads. The weather is fair, and not any too hot. Drones have been flying for some time. Most of my colonies have 5 to 7 frames with brood; a few have 8 frames with brood. One had 9 frames with brood. How would that be with an 8-frame hive? You know my hives all have 10 frames. My strong colonies also have queen-cells started, so I expect some new swarms soon. My strong colonies also have quite a bit of new honey in their hives already.

OTTO KLEINOW.

Detroit, Mich., May 21, 1885.

Friend K., if you made your bees fill a certain number of frames of brood, and made them fill them clear up to the corners before you gave them more frames, I think you could get all the brood there is in the best of your hives into eight frames, and still have room. Where we want to get the bees to put all the brood in the brood-frames, and all the honey in the sections, we wish to use the fewest number of brood-frames possible, and this is the reason why reversible frames have been talked about so much. By their use we can make the brood go clear up to the top-bar and clear down to the bottom-bar, and oblige the bees to put what honey they get, into sections.



He that is faithful in that which is least, is faithful also in much.—LUKE 16. 10.

MYSELF AND MY NEIGHBORS.

Discretion shall preserve thee, understanding shall keep thee.—PROV. 2:11.

ONE Sunday after meeting, while the boys were collecting in my class, I overheard some remarks in regard to the chickens which they each of them had at home. Quite an animated discussion was going on in regard to the merits of the different breeds, etc. Half an hour later, when their attention seemed to flag, and it seemed a hard matter to get them interested in the lesson before us, I suddenly woke them up all at once by taking for an illustration something that had to do with poultry-keeping. When they discovered that I could talk about Light Brahmas, Plymouth Rocks, and that I knew something about chickens, they were all on the alert; and if I did not teach the boys very much Scripture that day, I am inclined to think I got a hold on them that I had not possessed before. After the school was over, they plied me with a number of questions, and finally I told them I should be glad to have them come down and see my poultry-yard and Light Brahmas. A couple of them called a few days after; and finding that I had two hens on one nest, one of them made the remark that he did not believe I would have good luck if I let them go on in that way. Well, I did not have good luck. You see, the boy's judgment was better than mine. They seemed to do very well for a while, and each one kept on her own nest. The nests were so close together that, sooner or later, differences arose. One

thought the other had got some eggs that did not belong to her. Pretty soon some of the eggs were broken. The hens got soiled, and the other eggs got daubed with the broken ones; and as no chickens hatched from either hen, I finally concluded that eggs will not hatch when smeared over with any substance that closes the pores of the shell. I do not know whether my conclusion is scientific or not; but I do not want two hens on one nest any more. When I decided that the plan was a bad one, I just dropped one of the old Light Brahma biddies outside the inclosure of the wire netting. She walked around the yard, clucking for a day or two; and when she got over the sitting fever, I let her in again. The remaining hen stayed on her nest about a week over the regular three weeks. By that time she began cogitating in her mind (that is, if hens have minds) as to whether it was incumbent on her to waste any more time over those nasty, dirty-looking eggs or not. She evidently concluded there was not, for she got off her nest, and went and walked with the other hens, ate grass, drank water at the fountain, and sat under the shade of the evergreens. She stopped clucking, and behaved herself in a very sensible way.

Now, I have told you all this little story just to illustrate a point to which I wish to call your attention. These neighbors of ours, among the dumb brutes, even, have a certain amount of judgment, or wisdom or discretion, if we may so term it. I let the old hen stay longer than I should have done, because some of the eggs were laid in her

nest after she had been sitting a few days, and I did not know but she would succeed in hatching a few of them. Will it be safe to say she had *more* good sense in regard to the matter of continuing longer than I had? In going over to the house one day I passed her as she stood among the other fowls. She gave her tail a sort of wiggle, with a kind of self-satisfied air, as much as to imply, even if she did not say it, "I have done my duty as well as I knew how. In fact, I have done all that anybody could expect any honest, sober-minded hen to do. It is true, I did not succeed in getting any chickens; but I'm not going to worry about it, neither am I going to be so silly as to keep on clucking in a stubborn sort of way. I suppose the next thing to do is to lay some more eggs, and try it again, and I do not know why I should not be just as happy about it as if I had just succeeded in weaning a great brood of chickens, instead of having accomplished nothing at all."

An old horse oftentimes exhibits a good deal of judgment and wisdom. They have learned by many years of experience, how to do almost all kinds of work that horses usually do. There is a sort of dignity about them that I can't help admiring. Sometimes I feel like raising my hat, out of respect to an aged family horse. Yes, sometimes I feel more respect for him than I do for the man who drives him. Yesterday a friend was telling me of a horse they owned, who would cultivate corn all day, and not step on a hill, providing he was used well. He thoroughly understood his work, knew what was wanted, and seemed to take a degree of pride in doing it; but if some untrained boy undertook to jerk him around, and "holler" at him, he would get off his "hooks," as the saying is, and he would step on more corn in a little while than any horse you ever heard of. His dignity was offended, and his—I was going to say manhood, but I suppose it will have to be "horsehood," was outraged by setting somebody to manage him who had not as much good sense and understanding as the horse himself.

My friend, do you ever get angry at your horse? Within a few weeks we have been having a very bad piece of ground indeed down in the creek bottom and in the woods plowed up for the first time. I was afraid to set some of the hands about it, because they would get angry. Of course, the work was very perplexing, and it was pretty hard work to get the plow out of the roots, cut the roots off, and start in again, etc. I am glad to be able to say, however, that we have men here, good Christian men, who will take hold of almost any sort of a job of that kind, and I shall not be a bit afraid that they will lose their temper, jerk or scold the horses, or feel hurt toward me because I gave them such an unpleasant task. These men have wisdom and understanding. They have this rare quality of discretion. I complimented one of them on the patience and quietness which he showed in doing this hard work that I wanted done. He replied something like this: "Why, Mr. Root, it would not help things any to get out of pa-

tience. When one gets out of patience he does not get along as fast, nor do the work nearly as well." If the poor horses could talk, what do you think they would say about it? Did you ever see a bright, intelligent-looking, noble horse made miserable because some untrained, vicious man would swear and yell at him, and whip him? Mrs. Root says the greatest trial she has in this world, almost, is to see an angry or drunken man whip a horse. She says the only time she would like to fight is at such times as this. She would fight for the poor defenseless horses. I often tell her she ought to hire out to Mr. Bergh. Horses sometimes need whipping; but the Christian man, when he whips his horse, whips him with love in his heart—whips him not only to get the work along, but to make the horse better and happier. A horse that is made to mind, and that is made to understand fully *who* is master, is a happier horse than one that is not taught obedience.

Now, friends, I did not start out to write about horses, nor hens either, for that matter; but I started out to write about human beings; and as this paper is about as long as I usually make it, I think I shall have to take up the subject again in one of my Home talks.

Discretion shall preserve thee, understanding shall keep thee.

EPIPHYTYING.

MRS. CHADDOCK TELLS US WHAT THE WORD MEANS.

"EPIPHYTYING, epiphytying." I think I hear you say. "What is epiphytying, anyway?"

Well, an epiphyte is a kind of air-plant that grows on other plants, but does not derive its subsistence from them; and when we take baskets and boxes and old case-knives and go off to the woods to gather these air-plants we call it "going epiphytying."

Harry—did I ever tell you any thing about our Harry? I've been trying to ever since Mr. Root began to talk about Huber; but I don't believe there has been a word printed about him yet.

Well, last Sunday afternoon, after we had been to Sabbath-school and church in the forenoon—had driven home (five miles) and had our dinners and rested awhile, then the restless fit began to seize the children, to take a walk, to go somewhere, or do something; and Harry said, "Let's go epiphytying;" and we were so pleased with his use of the big word that we gathered the baskets and knives, and went. Harry will be five years old in eight days from now; and when I objected to the long walk on the plea of being tired, Harry said, "Oh, yes! do go, mamma; please do; you can lean on me."

After we started we found that the wind had changed, and we had to send back to the house for more wraps, while we sat on the fence and waited. Then we tramped through wet spongy fields of grass till we reached the timber and the epiphytes, and then such running and calling to each other! "Here's red ones! come quick;" "oh do come here! see this; it is the very prettiest one yet," and they ran from one old rotten stump to another, and some of the trees in the thick woods had them on the north side, away up to the branches. These

were mostly the common kinds—the flat green and gray discs that spread over old rails, and on tree-trunks in all damp places. We found numbers of what we used to call “clocks” when I was a child. We took them and marked the hours on them with the hands pointing to dinner time, and set them up in our playhouses. We found many red ones of the kind, and they were all small and much prettier than the white-faced ones. We found one that looks like a pansy—purple round the edges, then shaded gray, only these are all double, and I never saw a double pansy. These, Minnie says, are “rare;” and among her collection there are only four or five; then there is a little horny kind that looks like miniature deer-horns.

Well, they filled all the baskets and boxes, while I sat on a log and read a paper. When we started home we tried another path, and it led up a north hill-side where the frost was not yet out, but the ground was soft for an inch or two, and we went slipping and sliding every which way; and here it was that the assistance of my escort was needed, and he came gallantly to the rescue.

“Come here, mamma, come here; here is the best way; here, I’ll hold to this tree, and you take my hand, and I’ll pull you up.”

The tree that he took hold of was a hazel-bush, and I let him help me.

Minnie is scientific. She has a collection of plants and flowers, a collection of insects, and now she is making a collection of epiphytes. She has 32 different kinds now, and she has had it only six weeks. One of her specimens is the long gray moss that I got off a tree on the overflowed banks of the Mississippi last spring.

MAHALA B. CHADDOCK.

Vermont, Ill.

Well, my friend, you have taught me something that I didn’t know before. We always call these fungoid growths which you describe, by the general name of “punk,” and we boys used to gather it and peel it into strips for lighting fires. Our parents used to employ the same material, or something similar, for getting fire from flint and steel. I wonder how many of the boys nowadays know that a fire may be kindled by striking a piece of steel across the edge of a flint. In regard to these epiphytes, there is something that is very wonderful about them. They grow very quickly; and if you break them in two, you will find that they have a fibrous structure like other vegetation; but it looks odd to see the fiber running cross-wise of the plant. I never thought of using them for clock-dials, but I have noticed the pearly whiteness of some of the half-round ones. They seem to grow from a sort of colored water, charged with vegetable matter, which collects something in the way the stalactites form in Mammoth Cave; and in damp woods the growth is so rapid you can almost see it move. Some years ago I determined to go to my Abbyville Sabbath-school during a soaking rain; and on my way back I was rewarded by a sight of epiphytes really at the business of growing. I took a short cut through a piece of woods to save time; and while getting over a fence I noticed a dark brownish liquid oozing from an old log. The liquid was so thick with this old vegetable matter that a sort of scum, or transparent covering, had formed

around the liquid. This jelly-like covering was something like transparent leather or oil cloth, and the vegetable fibers were growing on it while I looked on. After what you have told in regard to these, I shall look on them with more wonder and curiosity than I ever did before; in fact, I am itching just now to go off into the woods and study up the subject. Can you tell us “children” of any books that treat on the subject? I am astonished to know that these are really air-plants; for since you mention it, from what I find in Wood’s Botany it seems they would come under that class.

WORKING TO THE LINE.

Not with eye service, as men-pleasers, but as the servants of Christ, doing the will of God from the heart.—EPH. 6: 6.

NOT long ago there were some carpenters working at our house; and as one young man went to fit the window-casing he had some trouble with it, and I said to the head carpenter, “What’s [the matter?” He replied, “He did not saw to the mark where I marked the board,” so you see the consequence was, the board was spoiled and the time lost.

The thought at once struck me, how many there are in this world who can not be guided by the line! In their haste or indifference or recklessness they go wide from it. Now, a good servant is as faithful when his master is away from him, as in his sight. Some day this young man will come to realize what a careless habit he has allowed himself to form; for if he wishes to learn the trade, and still continue in this way, in the end he will be only an indifferent workman. He will find it difficult to secure steady work. When “times are dull” he will be one of the first sent adrift, and the last employed when times improve. And all this comes from mere carelessness, mere inattention and lack of interest. It is just as easy to follow a line as it is to saw away from it. But one must use his eyes, and give his attention to what he is doing—that’s all.

But we can make a wider application of this than just to that young carpenter. When we see any one doing shiftless work, failing to put conscience into his work, thinking that will “do” which is only half done, I say you had better saw to the mark; for if you don’t, by and by the consequences will go hard with you; and, nine cases out of ten, you will go around grumbling at your “bad luck,” just as if there were anybody to blame but yourself.

I have seen clerks who were only eye-servants—very diligent when their employer was watching, but careless and neglectful the moment that vigilance was relaxed. I think you are not sawing to the line; some day you will have a peremptory dismissal, and find yourself loaded with a confirmed habit of shirking, that is very hard to get rid of. You will then see that it is always best to be faithful, even on the ground of self-interest.

When I see a scholar just fooling away his time—that is no word for it—not a “hard boy,” perhaps, as the school phrase goes, but just wasting the “golden hours” when he ought to be laying the foundation of a good education, “getting away” as easily as possible, instead of setting himself to master those studies, right here you see we find another who is faithful only in eye service. One of

these days that boy will regret those hours were so idled away. The general principle, in short, is to follow the line as nearly as possible, in every thing in which you wish to succeed. It is not genius that accomplishes great things in this world, although genius is God-given, and is a gift by no means to be despised; but it is a patient, earnest, exact work; it is following the line, right straight along its edge, doing the will of God from the heart; that is the true way to work; put your heart into it, not in the way of eye-service.

AUNT VIC.

Rockton, Ill.



Every boy or girl, under 15 years of age, who writes a letter for this department, CONTAINING SOME VALUABLE FACT, NOT GENERALLY KNOWN, ON BEES OR OTHER MATTERS, will receive one of David Cook's excellent five-cent Sunday-school books.

Many of these books contain the same matter that you find in Sunday-school books costing from \$1.00 to \$1.50. If you have had one or more books, give us the names that we may not send the same twice. We have now in stock six different books, as follows; viz.: *Sheep Off, The Giant-Killer, The Roby Family, Rescued from Egypt, and Ten Nights in a Bar-Room.* We have also *Our Homes, Part I.* and

Our Homes, Part II. Besides the above books, you may have a photograph of our old house apary, taken a great many years ago. In it is a picture of myself, Blue Eyes, and Cuddy, and a glimpse of Ernest. We have also some pretty little-colored pictures of birds, fruits, flowers, etc., suitable for framing. You can have your choice of any one of the above pictures or books for every letter that gives us some valuable piece of information.

"A chiel's amang ye takin' notes;
An' faith, he'll prent it."

ARE strawberries ripe at your house? They are not at ours, but we have great whopping green ones that Huber and I like to look at and admire almost every day. It keeps us quite busy picking the runners off nowadays. They are such great big strong ones that it almost makes me feel bad. It would be such fun to let them root into pots and get potted plants right off now, instead of waiting until August. But the old heads in the strawberry business say if you want nice large berries you must clip off the runners. One of our small boys does this with a pair of scissors and a basket. I have him put the runners in the basket, because I want to have him learn to be tidy and neat.

How are the chickens by this time? We make our chickens work. Do you want to know how? A while ago Mr. Weed was in real trouble because of the little green flies that got on his plants in the greenhouse, and we had more trouble outside of the greenhouse with little black fleas on the cabbage-plants. Well, Mr. Tillinghast said that a lot of little chickens among the cabbage-plants would chase and scare the black fleas clear off, every "last one" of them. Well, some chickens hatched, and we had a

nice coop made with wire netting over the front, so the old hen could see and be seen, and we just put her right down by those cabbage-plants. Sure enough, away went the fleas; and now we have fifteen or twenty thousand of the handsomest Jersey Wakefields and Winningstadts you ever saw. As the weather got warm, Mr. Weed raised up the short sash to the greenhouse, and the chickens hopped in and just "chuckled" when they saw those green flies on the tomatoes, radishes, and lettuce. They just went right in among the plants, and worked like little beavers, and pretty soon there was not a green fly anywhere. When they had finished one bed they would hop across the walk to the other side, and sometimes they would miss and get down the path. Then the engineer would help them up. But one day one little white chick (they are light Brahmas, you know) met a mishap, and went into the water-barrel. The engineer found him when he was apparently all dead; but he took him before the great fire under the boiler, warmed him up and dried him, and pretty soon he moved a little. After a while he got up and looked around, and in the afternoon he was chasing fleas and hunting flies as glibly as if he had not had that short but sad experience in regard to the vicissitudes of life.

One of our neighbors had 35 swarms of bees last summer, and 2000 lbs. of honey. I like to see bees swarm.

G. H. SWARTWOOD, age 9.

Tracy Creek, N. Y., Feb. 27, 1885.

PAPA'S HELPER.

Papa has 35 swarms of bees; 3 of them died this winter. We watch the bees to see them swarm. Papa gives us 5 cents if we see a bee swarm. He makes bee-hives to sell. I help him all I can.

JOHN I. EMIG, age 9.

Dandsburg, Pa., Mar. 29, 1885.

A LETTER FROM RED RIVER, LA.

I put up 77 of those frames pa got from you. I like to put up frames, but I don't like to work with bees, because they sting. I would rather raise chickens and ducks. Ma has 150 little chickens and 8 little ducks. We live on Red River, and it is rising very fast.

FLORENCE A. HARRISON, age 9.

Collinsburg, La., April 30, 1885.

FROM ONE OF OUR SIX-YEAR-OLD CONTRIBUTORS.

I am a little girl six years old, and have a little brother five years old, and he has been sick. I have a little sister one year old. Now I will tell you something about the bees. My pa had some bees, and they all wanted to hatch, so I went out there where they were, and one stung me right away on the arm.

FLORENCE WISEHEART.

Iola, Ill.

THE RESURRECTED BEES.

Papa opened a stand of bees a few days ago, and there was apparently no life in them, and there was no honey in the hive. Returning about an hour afterward, he found there was some life in them. He warmed plenty of honey, and poured it on the bees. He then heated a brick and laid it on the cloth, and now they are as lively as any of the bees. He calls it *resurrecting* them.

ESTA WILLIAMS, age 13.

Maysville, Ky., Feb. 11, 1885.

BENNY'S REPORT.

My papa began the year 1883 with 3 colonies of bees, and increased them to 15, and wintered 14, and increased them to 45, and then wintered 38.

BENNY MOSES, age 10.

Dupont, Minn., Apr. 25, 1885.

REPORT FROM A MISSISSIPPI JUVENILE.

I am a boy of 12 years old, and work in the field every day, and go to Sabbath-school every Sunday. We have about 15 acres of corn, and about 13 acres of cotton. We are going to get some bees as soon as possible.

H. D. BOOTHIE.

Caseyville, Miss., May 25, 1885.

ALICE'S REPORT.

This has been a very hard winter on our bees. We have 13 stands, and three of them died. We had five in the cellar. We fed them most of the winter. Some of them are very strong, and have a good bit of honey and brood. I am terribly afraid of them. Sometimes they come in on our porch and sting us. They never bother us when we make cider. My grandpa Stephens gave me a hive of bees, but I was so afraid of them that I sold them.

Cokeville, Pa., May 8, 1885. ALICE McBAINE.

WHISTLING DOWN A SWARM OF BEES.

I have one sister and two brothers. We live on a farm one mile and a quarter from town and school. Papa has five colonies of bees. Last summer as he was working in the garden he heard a buzzing noise, and looking up he saw a swarm of bees. He whistled, and they alighted in a tree near by. He lived them, and brought them home in the evening. My uncle, Mr. Sheldon, takes GLEANINGS. I am reading *Our Homes*. I think it is a very nice piece. My uncle has about sixty colonies of bees.

Independence, Iowa. LIZZIE WHITNEY.

CHARLEY'S PAPA'S "BEE-MILL."

My papa has about 50 bee-hives, and has lost 12 of them. I am a good little boy, 8 years old. I help my papa to tend to the bees. I go to school when it is good weather in winter, and help papa with the bees in summer time, and I go to Sunday-school every Sunday. Papa has got a bee-mill; he makes his own hives. I turn the bee-mill for papa. He says he is going to make a bee-man out of me. I help him bend the section boxes he gets of you.

Ellis Mound, Ill., March 1, 1885. CHARLEY HALL.

Very good, Charley: but, how about that bee-mill? I think it must be some kind of a mill to make bee-hives, only I do not see how a boy as young as you could turn very much. I am glad that you are a good little boy.

REPORT FROM "HOLLYWOOD" APIARY.

Sister Lillie began to keep bees with one small stock of Italians in the spring of 1883; later in the summer she bought a full stock of black bees. Next spring she increased to five; sold about eight dollars' worth of section honey. Brother made, at a small outlay, a good large extractor. This spring another sister bought a strong Italian stock, and the six increased to fifteen good-sized ones and two small ones. I hived the first three swarms during the absence of sister L., and she gave me the first swarm for my trouble. I was quite timid about them at first, as the stings do not agree with me at all; but the responsibility being thrown entirely upon me, I shouldered it as bravely as I could, and

am now fearless when well protected by bee-hat and gloves. Our bees are now "booming," and we hope to take a good surplus. GLEANINGS comes regularly, and is eagerly read and much liked.

Augusta, Ga., May 21, 1885. BERTIE NORRELL.

LETTER FROM A YOUNG CANADIAN ABOUT SWARMING.

I will tell you what I think about swarming bees. I would watch until they come out, and then follow them, keeping far enough behind them so as to be able to keep track of them; and when you see them settling upon something, stop and keep very quiet until they alight, then retrace your steps, and bring back where the bees are a small hive, then take a stick and shake them into the hive (this to be done very carefully); then cover up the hive with a white sheet, and leave it standing in the place until the bees that did not go in come back. Then carry the hive back to its usual place, and your bees are hived, and you have now one more hive of bees.

FRED TURNER, age 12.

Jarvis, Ont., Canada, April 30, 1885.

Very good, master Fred.

EULA'S LETTER.

My papa keeps bees. He has nine stands. We don't use any tobacco here, only mamma dips snuff. I go to Sunday-school every Sunday. I have two little sisters; one's name is Maggie; she is four years old. The other's name is Love; she is two years old.

EULA JOHNSON, age 13.

Cayce, Ky.

That is a pretty good letter, Eula; but I am sorry to hear that your mamma dips snuff. I do not suppose that many of our boys and girls know what dipping snuff means, and I do not remember that I ever saw anybody who did use it in that way, only I have heard of it. It is a tobacco habit, like chewing and smoking, but I believe it is confined mostly to women rather than men, and mostly to what we call "down South." I said, it is confined mostly to women, because I am pretty sure that our girls nowadays are not tobacco-users. Am I not right, Eula? Tell your mother, that if she feels that using tobacco is a bad habit, and is willing to give it up, with the customary promise, I will send her a smoker. If she does not work with bees, she can give it to your papa. I suppose, of course, your papa does not use tobacco, from what you say. I should think your mamma's breath would smell bad when she goes to kiss you, does it not?

OSCAR AND HIS COTTON PATCH.

I live with my grandpa, B. D. Kimball. I follow the farming business. I have a cotton patch, and it is coming up finely. I help my grandpa hive bees. I climb up in the top of trees, about 27 feet high, and saw them off, and let swarms down with a rope. They sting me sometimes. Grandpa gave me a hive. He received the crate of ten hives you sent him, in due time. We have eight hives from the one we received of you in 1883.

My school is out now. I have never been at school much. I learn at home. Grandpa takes your journal, and I like to read it very much. I like to read about your trip to New Orleans, and the cotton you saw and thought was some kind of weed. We have fine prospects for good crops. We

hope it will be a good honey year. Grandpa has in all 31 hives. The strawberries you speak of I never saw.

O. H. BAKER, age 11.

Blum, Texas, April 28, 1885.

Thank you, Oscar. I should really enjoy seeing your cotton-plants grow. I suppose if I come to see them with green leaves on I should not be so apt to call them "weeds."

JAMES' REPORT.

A bee-man who has been all over the county says there are less bees kept here than in any other part of the county. Many have tried it in box hives, and have failed, and are afraid to try the new ways, for fear of failing again. We have one of our honey-signs up, but our bees are kept by my aunt, three miles off. She took 90 lbs., mostly extracted, from one colony last season, which she thought was a good yield for the dry season, and the little attention they had, which was only to supply a plenty of empty frames of comb. She is trying to start a home market for her honey by leaving some at the stores and some to us three boys who she thinks will care to work with bees when we are older.

We have a No. 1 yoke of steers one year old. We work with them now, and it is fun for our visitors to ride in our cart when they come to see us. It would be nice to visit your factory, and see how big those boys are who work for three cents an hour, and how much they can do, and the older boys, and other things your paper tells of.

JAMES E. BRECKENRIDGE, age 13.

Watertown, Wash. Co., O., Apr. 11, 1885.

And so, friend James, I suppose if I should come to see you I could ride in that cart behind those young steers, could I?

BEES AND SILKWORMS.

I will tell you about our bees. We had 38 last fall; have 42 now. They are very slow in swarming. We lost two. I think the moths killed them. I live with my uncle, Mr. Hunt. I have been with them since I was a wee little baby. They have no children, and I am their little girl. My mamma and papa live near us. I have four brothers and two sisters. I can feed the chickens, milk the cows, wash dishes, and help about a great many things. I also feed the silkworms, and can wind the silk they spin, to knit my stockings, and to make my little brothers fishing-lines. The kind of silkworms we have are easy to wind off. Mrs. Hunt reels it; she has reeled a great deal for the people, and some of them she reeled for live up there where you do. We are raising eggs for the market this year. There are many wanting our breed of silkworm. Tell Miss Blue Eyes I could teach her how to wind silk. If you think I deserve a book, please send me your picture with that of Blue Eyes and Caddy.

LILLIE MITCHAM.

White Sulphur Springs, Ga., May 12, 1885.

Well, Lillie, it seems to me, although you say you will tell us about the bees, that your letter is mostly about silk and silkworms. I am glad to hear it, though, because you give me some new ideas in regard to silk culture. Some breeds of silkworms are better than others, are they? But, Lillie, when we give a picture we do not give a book, and when we give a book we do not give a picture. We decided to send you a picture where you can see myself and Blue Eyes and Caddy. That makes it all right, does it not?

THE WAY SYLVESTER AND HIS MOTHER SOWED ALSIKE CLOVER, ETC.

I thought I would tell you how we sowed our alsike clover. I grubbed up sod, and ma shook the dirt off and threw it away. We raked it all over, and ma sowed the seed. There was a woman from Florida visiting ma, who said snake-feeders killed bees there. SYLVESTER BABSON, age 11.

Lower Salem, Ohio.

If we are to understand, friend Sylvester, that you and your mother threw the dirt away that you shook off from the sods, it seems to me you did just the wrong thing. Sods are very valuable fertilizing material; and even the dirt that adheres to them is good for almost any growing plant. Turn your sods grass side down, and get some fine earth on top of them, enough to get your clover to start, and you will be sure of a good "catch," as the farmers call it. Greenhouse men buy sods in great quantities, and stack them up until they rot, so as to get real nice dirt for potted plants. If the heap of sods is wetted with soapsuds on washdays they will rot all the quicker, and it makes the nicest dirt you can get for potting strawberries or starting honey-plants. Some fine old stable manure mixed with the rotted sods is excellent for an addition.

THE DRONES WHOSE OWNER EXPECTED THEM TO LAY IN THE SPRING.

My father has 17 swarms of bees now. This spring he had four queens and about four quarts of bees. All of them have queens but one. There is an old gentleman who lives about a mile from our house. He has six swarms of bees. Three of them have drones yet. He says they are going to commence to lay early next spring. I have one pet; he is a cat, about 7 years old. If Annie picks him up he will commence to growl. Little Huber must have tough finger-nails to pull the corks out of the bottles. I should like to see him.

Cameron, Pa.

WILLIE WYKOFF.

Well, Willie, you knew better yourself, than to think that drones would ever lay eggs, didn't you?—It is not so much the tough finger-nails that Huber has, as it is the pertinacity with which he sticks to anything he undertakes. Yesterday I was startled by seeing the Waterbury watches, that hang in one of our store windows, flopping about as if they were alive. I started in alarm to see who could be swinging them around so. You see, it is warm weather now, and the window was up. Huber had climbed up on the outside of the window; and while he sat on the window-shelf he was amusing himself by taking down watches and hanging them up again. I set him down on the sidewalk; and while I was telling him how naughty it was to meddle with the watches without papa's leave, he grabbed hold of a big head of lettuce that we had in a box for a sample, and pulled off one of the nicest leaves. Then I had to commence another little sermon about meddling with things, and pretty soon mamma came along with his wagon. You see, when he runs away she goes after him with a little wagon, because she can draw him home quicker than she can lead him by the hand.

OUR HOMES.

In the beginning God created the heaven and the earth.—GENESIS 1:1.

For God so loved the world, that he gave his only begotten Son, that whosoever believeth in him should not perish, but have everlasting life.—JOHN 3:16.

IT was a warm Sunday night; in fact, a thunder-storm was approaching. The house was all still, and every one, I believe, was wrapped in slumber. The weather was so warm that baby Huber had not only kicked the clothing off, but, being restless, he had crawled down near the foot of the bed, with his head over toward an open window. He seemed a little nervous, even in his sleep, for the day had been an eventful one to him. He had attended the young people's prayer-meeting in the evening for the first time in his life. He had been at one meeting once before, it is true. You may remember I told you about it a year ago. It was the morning of the Fourth of July. Well, both Huber and his papa had been on a tease for several Sundays past that he might "go meeting with papa." At length mamma consented, and Huber sat on a chair by his papa's side, and was permitted to hold a hymn-book while he listened to the chorus of voices. He is fond of music; and when some of the pieces were unusually full of melody I noticed by the movement of his little white dress as he drew long breaths that the whole scene all together was stirring his little heart. Very likely he could not quite make out what the purpose was of having the meeting. He turned his head one way and then another, and looked at the happy faces, and doubtless concluded that the gathering was for some good purpose, even though his baby heart could not quite make out what the purpose was. So many nice ladies was a mystery to him. He calls them "ni' 'adies." As they caught his admiring glances, is it any wonder that he got back many a pleasant smile?

When he saw the rest bowing their heads in prayer, he seemed to catch the spirit of devotion as well as the spirit of song, and his little hand was raised reverently to his forehead while he bent his head as he had seen the others do. He did not know what it was all for, yet something in even his little heart seemed to say it was good to be there, and there could certainly be nothing wrong in bending his little head with reverence and respect for the spirit that seemed to be moving the hearts of this body of people. His mamma had said, over and over, when the matter was talked of, that he would talk out loud in meeting, and "holler" and carry on. He had not lisped a word, with but a single exception. When the meeting was about half over, while he was looking at the different things he saw with open-mouthed wonder, he chanced to glance at the large chandelier, and it was so much nicer than any thing he had seen at home, that he commenced an exclamation of surprise, but stopped short at a look from papa.

Well, the meeting was over, and we were all sleeping soundly, as I told you, until the noise of the thunder and the almost incessant

blaze of the lightning awakened him. He crawled up to mamma first, and then, contrary to his usual habits, turned over to where his papa was sleeping soundly. I was awakened by a piping little voice:

"Papa! papa!"

"What is it, my boy?"

I noticed that something was on his mind, and he was trying to give expression to it; but his brief vocabulary of words did not quite admit of hitting the point he wished to express. Finally he managed to make me understand. How strange it is, that we learn to define the purport of the few brief fragments of words that these little ones get hold of! What he said was this, as near as I can remember:

"Papa, where 'gettie'—where 'gettie'?"

"Where 'gettie' what, my boy?"

"Where?"—with quite a pause—"where 'gettie' thun'er?"

Now it was plain to me. He wanted to know what the thunder and lightning were for, and where they came from. The elements were making quite an unusual disturbance without, and the blazing of the lightning might call forth wonder and astonishment from any one, who did not sleep as papa usually does. That meek little voice wanted an explanation of the rumpus going on without, which papa did not seem to mind any thing about. Papa evidently seemed to think it was all right, and nothing to be alarmed about; but his little playmate (Huber and I are playmates, you see) could not quite understand it, and he felt pretty sure that papa would not object to being awakened in the middle of the night, especially when baby Huber seemed disturbed, and wanted so much to know about these things. How should I explain to him about the phenomenon of thunder and lightning? and especially, how should I allay the fears that were troubling his little breast? Papa had already told him about God, and had tried to instill into his little mind a proper idea of this great Father who, according to the language of our text, created the heaven and the earth.

"My boy, God made the thunder and the lightning, and it is all his."

He repeated it over after me, evidently to get a little more assurance, and then came a further interrogation:

"Hurt Huber?"

"No, my boy, it won't hurt Huber. It is God's thunder and God's lightning, and God loves little Huber. He loves papa and mamma, and he loves all the people that are good."

I had struck the point. His little mind was already groping and reaching up toward that great Unknown. I can imagine that it seemed to even his little mind that it could hardly be we are sent alone into this strange world without help and without protection, or that it could hardly be that there was nothing to satisfy this almost indefinable longing for sympathy and love from this "Great Spirit," as the dusky children of the forest would term it. He wanted to know about Him who holds the winds and waves and lightnings in the hollow of his hand, and who on earth could tell him truly about

these things so well as his papa? Papa had explained things to him in the fields; he had told him about things when we were out riding in the buggy. He knew his papa told the truth, because his papa had never fooled him nor disappointed him. When he told him that, in a few days, there would be nice berries on the strawberry-plants, he knew it would come to pass. Yes, on that very Sunday morning he and his papa had had a jollification over finding some great ripe strawberries, right where papa said they would grow. A great many things papa could manage and control. He could make old Jack behave, and he could make the machinery mind at the factory; but this thunder-and-lightning business evidently was something that papa did not start, or had not much to do with. How did it come, and what was it for? That was what he wanted to know; but the best way he could manage to frame the thought, from the stock of words contained in his infantile vocabulary, was as he put it, simply "Where 'gettie'?" Papa's explanation was sufficient. The thunder and lightning were God's, and God was the one who made the "great big sun," and the stars "away up high;" who made even papa and mamma and Huber. These were great truths, but they were hardly satisfying. An elephant is great; but if we were alone with him in the woods, a more important question would crowd itself upon us—Is he friendly? A horse is not only great and powerful, but he is handsome. He is nice to look at. These qualifications are good so far as they go; but the more important question is, "Is he kind and gentle?" especially if we are to be placed in his power. It helps us to know that God is great; but it satisfies us infinitely more to know that he loves us. He created the heaven and the earth, it is true; but, how about poor weak helpless human beings, such as we are? Does God love us? When he fashioned us from the dust of the earth, he also framed the heavens, and gave the thunder and lightning a place in the universe. Had he any plan in regard to these things, or was it all framed without plan or purpose anywhere? Did we enter into his plans any more than the thunder and lightning? and are we of any more account now than they are? Does he care if they crush and devour us? O my friends, to be sure, he cares; "for God so loved the world." What a beautiful, beautiful text is this, and some way it satisfies me, and makes me happy, to turn from this first verse in the Bible over to the third chapter of John, and to that sixteenth verse. I am told that others have found comfort in that sixteenth verse as well as myself. The stenographer who is taking down these notes says he has a copy of that verse in 240 different languages. Why was that verse singled out above all others, to be translated so that all nations of the earth can read it, even if they can not read the rest of the holy word? Why, because that verse is of such wonderful import and importance to the children of men. While I think of it I rather expect that Huber will love that verse above all others. What a wonderfully pleasant task

it is to teach these little ones these great truths! When I talked to him there in the darkness of the night, and assured him of God's love, while I allayed his fears with my hand on his little confiding self, what a glimpse I had of God's love *myself*! It seemed to me as if God were pleased to have me state so positively that there was no mistake about it. He loves us; and even though he should see fit at times to let the lightning strike us, and even though we may be called upon to endure death by the devouring elements, still that great love is there, and his presence and his Spirit shall be with us in the hour of trial, bridging over the dark stream—the only conditions being that we trust and obey him.

Huber is sleeping again. He is resting on that great truth that his papa unfolded to him. How do I know it? Because in his sleep several times I heard the simple little words, "God loves Huber." He had taken the statement from me as a fact, you see, and the fact satisfied him. He did not understand it quite all; and before he had got quite soundly to sleep he sometimes got things mixed up a little; and as I listened once to hear what it was he was saying in a dreamy sort of way, after the words "God—loves—Huber" then came still more slowly, "thun'er—loves—Huber." You see, the fear of the thunder had been allayed by the thought that it was one of God's creatures—one of his servants, entirely subject to him; and if God loved Huber, is it any thing strange that, in his infantile mind, he in his sleep cut the matter short by the expression I have quoted, and resting on that thought went to sleep and slept soundly till morning? Would it hurt any of us if we rested on just such a childlike faith as that—a faith in God? "Except ye become as little children," etc.

Now, friends, such thoughts as the above were often in my mind when passing through Mammoth Cave; and when somebody suggested that those great rocks might fall and bury us up, a sort of feeling came up at once, if they do, God is near: "fear not, little flock."

To take up the thread of our story where I left off last month, we will finish our trip.

"Danger on the right!" sings the guide once more. "The Fat Man's Misery," announced the guide. Now, I expected to see something unpleasant; but, imagine my surprise when we entered the most beautiful portion, to me, of Mammoth Cave. Of course, we had to stoop and be squeezed to some extent, but we went down a beautiful winding way, with a nice level path under our feet, with carvings and formations rising at our sides, perhaps waist high, that seemed as if they must have been carved out for ornamental purposes. Some of it looks like a pretty garden fence. Again, there were beds spread out at each side, something as you see them in a greenhouse, and the carvings in stone would answer the purpose of flowers. One instinctively passes his hand over the flutings and moldings as he turns this way and that in this narrow, rocky cavern. There has been an attempt made to change the name to the Winding Way, but

the name does not stick. This passage is 250 feet long, and turns abruptly eight times. We find waves and ripples in the petrified rock. This passage is very interesting to blind people, because they can pass their hands over the rocky formation without trouble, and take in its wonderful beauty.

From Fat Man's Misery we emerge into what is called "Great Relief," for we have plenty of room to spread out and hold up our heads. It used to be thought, that if this close passage were blocked up there would be no means of escape from the regions beyond. In 1871, however, William Garvin, the colored guide, discovered a short cut known as the Corkscrew; and after you have climbed through it you would be willing to decide that the name is appropriate. It is a sort of clamber over loose rocks, twisting first one way and then another, winding around like a corkscrew, and then winding the other way, but all the while going upward. Occasionally you look through the crannies in the rock, and see your comrades with the lanterns away down at the bottom of a well below, as it were. The distance is altogether 150 feet. Sometimes you climb short ladders, again you spring from one rock to another, the guide catching you by the hand as you alight, that you may not slip off. Care must be taken that loose rocks are not rattled down, lest they strike your comrades below. In going back to the mouth of the cave this corkscrew ascension saves about a mile of travel. Oddly enough, you squeeze through a fissure and come out among the Kentucky cliffs near the ceiling; in one of those vast rooms where we hung our overcoats when we started in.

We are not ready to go out yet, however. The guide takes us off in another channel, and shows us Odd-Fellows' Links, which are in black on the ceiling of the cave. Then we come to Bacon Chamber, which awakens a laugh from almost every one who sees it, for there, hanging down just so as to clear our heads, are veritable smoked hams—smoked hams in shape and size, and smoked hams in color. When we touch them they feel like smoked hams. I suppose they have become greasy from being handled by so many fingers in the years past. I looked at them again and again, and each time it seemed more incredible that these things could have been formed thus by the passage of the water.

Now we go down to Lake Lethe and Echo River. The guide produces a tin dipper, and we take a drink of these famed waters. It is just a still body of water, away down in the darkness. The guide shouts, and the strange echoes come back to us. Then others shout, and we know now why it is called Echo River. This river comes out at the point where Ernest and I discovered it the night before in our rambles. The way they prove it, they throw chaff into Echo River, and it comes out at the hillside where I have mentioned. The eyeless fish and the lobsters are to be seen only in the long route. But they are always to be found on the tables where other samples are kept at the hotel. They are put up in alcohol, in little bottles at 50 cents a bottle. Here we have a room covered with snowballs, and one is al-

most irresistibly forced to believe that a lot of schoolboys did it for mischief. But there the snowballs stick, and have stuck for ages. They are crystallized plaster of Paris.

And now, friends, we are informed we are at the end of our trip. A feeling of sadness comes over me—sadness caused by the thought that this wonderful experience of the past two or three hours has come to an end. As we near the mouth of the cave, the breeze strikes us again, and the temperature reminds us that it is winter. The boys catch their bats, and put them into their pockets, even though the poor animals do scratch like a sitting hen. I did not want any bats. A sort of solemn feeling came over me as had many times before during the trip. "In the beginning God created the heaven and the earth"—even this Mammoth Cave; or, at least, he laid his plans so that the water might do the work. I did not feel like talking. The iron door swung back, and we passed out. The little cascade sparkles again in the moonlight. How different is the outer air! It seemed heavy and suffocating. The odors of the trees seemed strange and intense. I am told that people sometimes experience faintness as they pass out. Good-by, old Mammoth Cave. I am a wiser man after having formed your acquaintance, and may God grant that I am, at least in some respects, a better one.

Now, then, a word or two in regard to how all this came about. Perhaps many of you feel like saying with Huber, "Where 'gettie'?" Yes, indeed, "where 'gettie'?" Well, I will give you some of my opinions, gathered from what I saw and heard. Green River, of which I have told you, is quite a brisk-moving body of water, away down between two great hills, or mountains, only they are not hills or mountains, for there is no valley on the other side. The river has cut its way, as it were, through the rocky landscape. In fact, it is cutting its way deeper all the while. Somebody has said that it empties eventually into the Ohio River, with its freight of minerals in solution. Well, some time Green River was not down so deep in the earth. The rain water years ago fell on the hills of Kentucky as it does now. It ran into the valleys, and then ran into the ground. To escape, the water cut passages through the fissures of the rocks, and finally formed Green River. As the river cut its way down, the water settled in the hill to a lower level, and left its first channel high and dry. As this process went on for centuries, the water was continually cutting new water-courses, forming new subterranean rivers, as it were. At the same time the water was cutting away, it was, in other places, building up by precipitating these mineral substances. Now if you go back and read what I have described, keeping the above in mind, you will find the solution to many of these mysteries—Bacon Chamber, for instance. How does it come, however, that these stalactites and stalagmites, and chunks of bacon, and snowballs, and other things, are not now soluble in water? In fact, many of the specimens are more like flint or quartz. Well, see if I can help you by an illustration. If the water of

a spring ran over some cakes of tallow, it would not affect the tallow at all, nor would the tallow affect the water. Suppose, however, the water first ran through a body of ashes. Then it would be ready to wash away the tallow with great rapidity; and as it evaporated, soap would be left along its course. In this same way, many minerals are dissolved and held in solution, and again precipitated. There are said to be in the State of Kentucky 100,000 sink-holes, such as were so great a curiosity to me when I first saw them out of the car window. There are also many smaller caves. In Edmonson County alone we are told there are upward of 500, big and little. What a wonderful field for exploration, and what a wonderful place to study God through his works—yes, works that are going on even now!

In the beginning God created the heaven and the earth.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,
EDITOR AND PUBLISHER,
MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, JUNE 15, 1885.

And this is the condemnation, that light is come into the world, and men loved darkness rather than light, because their deeds were evil.—JOHN 3:19.

BEEWAX AT THE PRESENT DATE.

UNTIL further notice the best offer we can make on beeswax is 22c cash or 25c trade.

THE A B C OF CARP CULTURE.

WE are happy to say, that the above book is now in stock, and all orders have been filled some days.

BUSINESS AT THIS DATE, JUNE 15.

ALL orders are filled, and clerks are waiting for more, ready to pitch into them the minute they get their hands on them, if we may except orders including untested queens. But these are only a few days behind, and enough queens are in the apiary to fill all orders on our books as soon as said queens get to laying.

HONEY FROM THE HARD MAPLE.

WE notice that Bro. Jones, of the *Canadian Bee Journal*, suggests that hard maple yields as much, if not more, than fruit-blossoms. We admit this to have been the case this past spring, but we do not believe it is a common occurrence. During only two seasons have we noticed the hard maple yielding such a quantity. However, it will be an excellent idea to have strong colonies in good trim for this new source of honey.

HONEY-LABELS.

WE have just finished printing our new book containing specimens of all the different kinds of honey-labels now ordinarily in use, both in black and colors. Every possible pains has been taken to present to our friends the most attractive display

for their honey-packages. The book is 4x6 inches, and contains about 24 pages. Besides labels for honey, we also print letter-heads, envelopes, library numbers, etc. All interested in this particular line should not fail to send for one, which will be mailed to any address free.

A KIND WORD FROM OUR OLD FRIEND MR. LANGSTROTH.

WE are all rejoiced at the receipt of the following few lines on a postal card—especially the concluding part of it. Of course, we told friend L. that we would regard it as a privilege to send him a potato-book, or any other book, free of charge, if he is able to read it.

Please send the potato-book, and charge to my account. I am thankful to be able to inform you that I have recovered a very comfortable use of my limbs from the attack of paralysis last February, and that my general health is improving.
Oxford, Ohio, June 3, 1885. L. L. LANGSTROTH.

MAIL ROBBERY.

A MONTH ago, a mail-bag containing a large amount of our mails was stolen somewhere on the route. This mail-bag has recently been found, and many of the letters have been forwarded to us. The whole will reach us as soon as the U. S. detectives have got through with the letters. This will explain the reason of delays to several of our customers. Their letters were just about one month behind time when they came to us. We learn that our friend A. C. Nellis, of the Mohawk-Valley Seed Warehouse, has had a similar trouble, but a much more extensive one. It was caused by a clerk in the Canajoharie postoffice, who is now under arrest.

THE WIRE NETTING FOR POULTRY-YARDS.

WE have purchased over a thousand dollars' worth of this wire netting already, and have finally enough on hand to fill all orders promptly. The fabric is being used for a great variety of purposes besides confining poultry. It is a cheap, neat, and efficient protection for almost every thing that needs to be protected. It is well known that Irish junipers, when small, are often injured or killed by dogs or other animals. Roll up a piece of wire netting, set it over the tree, put four or six stakes inside, staple a band of netting to the stakes, and you have it. If you want to train climbing vines on your porches or elsewhere, a strip of netting makes the nicest trellis you can invent. It never rusts, and is unaffected by summer's heat or winter's storms. If you want to exhibit some nice goods, fruit, oranges, or berries, make a screen around in front of your fruit, with wire netting; and although it is full in sight, even meddlesome small boys are prevented from handling it. New uses come up for it every day. See advertisement on cover.

BEE-VEILS WITH GLASS IN FRONT OF THE EYES.

THIS matter has come up again, and our friend J. C. Capehart mails us a sample of a very neat one. The glass is quite thin, and slightly concave. It is very neatly attached to the mosquito netting that forms the body of the veil. Some of the friends may remember when the subject was up several years ago, that the matter was pretty thoroughly discussed. You can see better through a clean glass than you can through any sort of lace or netting; but unless you are very careful the glass will become soiled, and then you have to keep wiping it off as our elderly friends wipe their spectacles. If you get any honey on it, you would be apt to turn it to one side, and prefer to look through the netting.

Another thing, such a veil can not be handled as veils usually are, or the glass would be broken. If you are very neat and tidy in your habits, however, may be you will think the glass front is a very great improvement. Friend Capehart will mail you one per terms in his advertisement in last issue, if you wish to try it.

REDUCED RATES BY FREIGHT ON BEE-HIVES, EXTRACTED HONEY, AND IMPLEMENTS GENERALLY, USED IN THE APIARY.

At the Bee-keepers' Congress in New Orleans, the matter of freights was talked over pretty thoroughly; and as we had a railroad man among us, Mr. S. C. Boylston, General Freight Agent, of Charleston, S. C., I suggested that we instruct him to properly present the matter before the proper railroad officials. He has done so, and has accomplished enough, at least, so that he should have the thanks of every bee-man north or south. Honey in barrels or kegs can now be shipped as fifth-class freight, or at the same rate of classification as syrup and molasses. The rates on hives in the flat and set up are about the same that we had been obtaining from most of our large lines; but friend Boylston has succeeded in securing a general classification, so that, hereafter, railroad men need not say they do not know what rates ought to be charged for bee-hives, and so put them in as double first-class (that is the rate they charge for shipping looking-glasses), so as to be sure to get it high enough. Friend Boylston is a fair type of a real live Southerner, and he is just the man exactly for the place he fills. Friend B. can doubtless furnish printed leaflets containing this classification, which you are to get and submit to your own railroad agent, if he is not posted. The new classification took effect June 2, 1885. We will publish a letter from Mr. B., in the next issue.

WHO SHALL BEAR THE LOSS?

SUPPOSE A ships B ten pounds of bees, with a queen with each, and they arrive at their destination dead. In such a case, the usual way has been for A to send another lot, and so on, until he succeeds in getting the whole to the destination in good order. If A is so unskillful that he loses money badly before he gets through, he had better give up shipping bees and queens. But suppose, friends, after the first lot arrives at the destination dead, B says he does not want any more because it is so late in the season, or something of that kind. Shall he receive his money back, and leave A to shoulder the whole of the heavy loss? This question comes up almost every season, and I do not know that a decision has been made in regard to it. Of course, a good deal would depend on what A advertises to do. If he simply advertises to replace all lost in transit, I can not see why he should be asked to refund the money, unless he chooses to return a part of it, rather than to undertake further shipments; and my decision would be, that in no case should A be asked to return the full amount, shouldering the whole loss himself. Shipping bees and queens is necessarily a risky business; and in view of this I would caution new hands to beware about making their printed prices lower than they can stand, in case of such contingences as the one I have mentioned. Of course, A should be prepared to send more bees promptly as soon as he knows his first shipment was a failure. If he can not do this, he should discount on the prices in accordance with

the amount of time that elapses. Of course, the later in the season bees are sent, the less would be their value.

BEING IN HASTE TO SHIP GOODS BACK THAT DO NOT PLEASE YOU, BEFORE YOU HAVE HAD ORDERS TO DO SO.

THERE are few things in business that so vex and try my patience as this fashion that has, by some means or other, got hold of some of the friends. I suppose it is sometimes done because of ill humor in being disappointed; and things that are done in ill humor are seldom wisely done. Let me explain to you how it works. We do an immense trade in scales for bee-keepers, for instance, and may be furnish them at prices that have been hitherto unknown. We are enabled to do this by buying large shipments of the manufacturers; and then comes the question, "How small a margin can we work on?" Perhaps we could handle the goods with a margin of only 10 per cent, if we could be safe from losses in the way of goods injured in transit, mistakes in addresses, and other incidentals. To guard against defective goods being sent out, we make arrangements with the manufacturer that he is to make good all defects at his own expense; then when a complaint comes we direct the complaining party to ship it straight to the factory, and we send him another one from here. This all goes nicely unless our friend gets vexed in finding his scale defective, and ships it to us by express, without asking for orders in regard to its disposal. When it gets here by express the charges are more than the profit we make on half a dozen scales, and it has to be shipped again, may be to some of the Eastern States. What should he have done? Why, he should have written on a postal, "Mr. Root, this scale does not weigh right, and we can not fix it. What shall we do?" Our answer would have been almost equally brief, "Get it repaired if you can, and we will pay charges. If you can not conveniently, ship it to —, and notify us by return mail, and we will replace it at our own expense."

Sometimes goods are returned to us by express when the nature of the break makes them entirely worthless; and charges toward a dollar or such a matter have to be paid in express charges, or else the innocent express companies suffer. I have heard of shipping back *dead fruit-trees*, instead of informing the shipper that they had been delayed so long on the way that they were perfectly worthless. Have you any legal or moral right to burden one of your fellow-men in the shape of charges on any kind of goods before he has had an opportunity to even consent to your act of re-shipping? Has anybody any right to send any one any thing by express, unless he has been ordered to do so? If you pay charges to destination, that is another thing, to be sure; but even then I think it best to get permission before you ship the goods. It is a trouble and bother to us to have goods sent here that we do not want here, even if the charges are paid.

UP WITH ORDERS

I am up with spring orders, and can send queens by return mail. If you want untested Italian queens, reared from imported mothers, send \$1.00 for one; \$1.90 for two; \$5.00 for six; \$9.00 for 12.

Address
12-13-14d

W. S. CAUTHEN,
Pleasant Hill, S. C.

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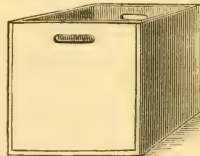
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2-fdb

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12	2 2 rolls, 100 s. f. each.
20	3 3 rolls of 168 s. f. each
22	4 3 rolls of 181, 1 of 168 s. f.
24	6 4 rolls of 209, 1 of 180, and 1 of 120 s. f.
26	7 2 23 rolls of 217, 29 of 216, 1 of 208, 2 of 195, 1 of 156, 2 of 151, 2 of 215, 1 of 210, and 1 of 151 s. f.
28	12 15 rolls of 232, and 2 of 234 s. f.
34	7 6 rolls of 281, and 1 of 255 s. f.
36	3 1 roll of 257, 1 of 93, and 1 of 106 s. f.
38	5 28 rolls of 316, 3 of 285, 2 of 317, 1 each of 190, 632, 178, 126, and 215 s. f.
40	1 1 roll of 130 s. f.
42	1 1 roll of 245 s. f.
44	2 1 roll of 326, 1 of 318 s. f.
46	1 1 roll of 152 s. f.
48	12 11 rolls of 400, 1 of 209 s. f.

A. I. ROOT, Medina, Ohio.

THE CANADIAN BEE JOURNAL.

WEEKLY, \$1.00 PER YEAR.

D. A. Jones & Co., Publishers, Beeton, Ont., Can.

The only bee journal printed in Canada, and containing much valuable and interesting matter each week from the pens of leading Canadian and United States bee-keepers. Sample copy sent free on receipt of address. Printed on nice toned paper, and in a nice shape for binding, making in one year a volume of 832 pages.

9-fb

BEES and QUEENS

At Greatly Reduced Prices.

After June 15 I will sell 2-frame nuclei, with 2 lbs. of bees in each, no queen, for \$2.25 each. Tested queens, \$1.50 each; warranted queens, \$1.00 each; untested queens, 75 c. each, either Syrian or Italian.

I. R. GOOD, Sparta, Tenn.

TRY THE BELLINZONA ITALIANS, and see for yourself that they are **THE BEST.** Warranted queens in May, \$1.25; June, \$1.10; July and after, \$1.00; six for \$5.00. Bees at reduced rates. Send for descriptive circular. Satisfaction guaranteed. CHAS. D. DUVALL, 9-fdb Spencerville, Mont. Co., Md.

MUTH'S HONEY-EXTRACTOR, SQUARE GLASS HONEY-JARS, TIN BUCKETS, BEE-HIVES, HONEY-SECTIONS, &c., &c.

Apply to **CHAS. F. MUTH, CINCINNATI, O.**
P. S.—Send 10-cent stamp for "Practical Hints to Bee-Keepers." 1-fdb

\$1.00 Discount.

I will offer, for the next 30 days, Novice honey-extractors for Langstroth frames, \$6.00; for American frames, 6.00; usual price \$7.00. Also Italian Bees and Queens for sale. Send all orders to
12-13d

GEORGE W. BAKER, MILTON, WAYNE CO., IND.

HONEY COLUMN.

CITY MARKETS.

CLEVELAND.—*Honey.*—There is no change in the honey market. The prices are nominally unchanged, 14¢45, but we have no transactions to report; in fact, we do not look for any demand until after the strawberry season, when there usually springs up a demand.
A. C. KENDEL.

June 20, 1885. 115 Ontario St., Cleveland, Ohio.

BOSTON.—*Honey.* 2-lb. sections, best white, 14; 1-lb. sections, best white, 15; extracted, 7¢9c. Trade, of course, is very slow on honey, but we can't expect any thing better this season of the year.

Bee-swar. none on hand. Sale very slow.

June 22, 1885. BLAKE & RIPLEY,
57 Chatham St., Boston, Mass.

CHICAGO.—*Honey.*—Very little doing in the honey line at present. Market may be said to be very dull; prices unchanged from last quotations.

Bee-swar. 23¢25c; quiet.

June 20, 1885. R. A. BURNETT,
161 So. Water St., Chicago, Ill.

NEW YORK.—*Honey.*—There is no change in prices of honey from last issue. *Bee-swar.* lower. Prime yellow sells at 26¢29c., as to quality and quantity.

June 13, 1885. McCALL & HILDRETH BROS.,
34 Hudson Street, corner Duane St., New York.

CINCINNATI.—*Honey.*—There is no change whatever in the market for honey, which is without life for some time. We have a good class of regular customers who use considerable honey, while outsiders can hardly be induced to purchase. We quote extracted honey at 41¢@8c, and comb honey at 9¢12c on arrival. *Bee-swar.*—Demand is good for beeswax, which brings 23¢@28c on arrival for good yellow.

S. E. Cor. Freeman and Central Avenues,
June 20, 1885. Cincinnati, Ohio.

ST. LOUIS.—*Honey.*—Our market continues very dull. Extracted Southern, in bbls., held at 5c; half-bbls., 6c. Comb honey, no demand; nominal, 8 to 12c. *Bee-swar.*—There is very little demand. Stock increasing; last sales at 23c, likely to go lower.

W. T. ANDERSON & Co.,
June 22, 1885. 104 N. Third St., St. Louis, Mo.

MILWAUKEE.—*Honey.*—This market is without any interesting features to note regarding honey. There is very little comb, and the demand is almost nothing from first hands, and values nominal. Extracted in good supply, considering the limited demand for it. Quotations nominal; viz., 1-lb. sections, white, 12¢12½c. Extracted, in pails and kegs, 7¢@8c. *Bee-swar.*—Slow, and demand light. 25¢@28c.

June 22, 1885. A. V. BISHOP,
142 West Water St., Milwaukee, Wis.

NEW YORK.—*Honey.*—Nothing doing in comb honey. Quite a lot of old stock in market yet, but we believe it will be disposed of before new comb honey comes in. We make no change in prices since our last. New Southern extracted honey is coming in freely, and selling at from 55¢@60c. per gal. in lots.

Bee-swar plenty, demand limited, and prices ranging from 25¢@27c. for prime quality.

June 22, 1885. THURBER, WHYLAND & Co.,
Reade & Hudson Sts. New York.

CIRCULARS RECEIVED.

J. W. Clark, Clarksburg, Mo., sends us an 8-page list of supplies generally.

J. P. Connell, Hillsboro, Texas, sends us a 4-page list of bees and queens.

E. W. Geer, St. Mary's, Mo., sends us a 4-page list of bees, hives, and supplies generally.

Wm. Little, Marissa, Ill., sends us a 6-page price list of bees and queens, very nicely printed.

George M. Gray, Medina, O., has just handed us his new specimen-book of plain and colored labels for honey-cans, and other purposes. In this book, which contains about 40 pages, Friend George has given us the best production of his hand and brain, both of which are above mediocrity in this line of work. It will pay you to send and get a copy, which will be mailed free, to all contemplating business.

LET ME HELP YOU.

I will sell, to all wishing to buy during July, August, and September, pure Italians. One hive for \$6.00; five or more for \$5.50 each.

Hybrids, one for \$5.00; five or more for \$4.50 each.

Blacks, one for \$4.50; five and more, \$4.00 each.

All 10-frame, 2-story, new Langstroth hives. Safe arrival guaranteed.

G. W. ALBRECHT,
13-14-15d Dundas, Calumet Co., Wis.

SAFE Introduction. After July 1st, for from imported mother, \$1.10, or safe arrival only guaranteed, shipped in the *Safe Introducing* cage for \$1.00. Send for our new catalogue. You will learn something new. See ad. in May GLEANINGS. S. A. DYKE & CO.,
13-14-15d Pomcroy, Meigs Co., Ohio.

Italian Queens.

Untested, each	 \$1 00, or six for	 \$5 00
Tested,	 2 00,	 11 00
Two-frame nuclei, with tested queen,	 4 00	
..... untested	 3 00	

My queens are from imported or home-bred Italian mothers; the same strain has averaged for the last four years from 30 to 236 lbs. of honey per colony. Try them. They will please you. Safe arrival guaranteed. Comb Foundation, brood, 40c; light, 50c. Address

13-14d J. J. HURLBERT, Lyndon, Ill.

150 CHOICE CELERY PLANTS

by mail postpaid, for \$1.00; 350 for \$2.00; 1000, by express, \$2.50. Reduction on large lots. Please address A. T. COOK, CLINTON HOLLOW, DUTCHESS CO., N. Y.

A. I. ROOT SAYS:

"I have examined your Automatic Honey-Extractor and am well pleased with it. It is well made, and the reversing device does you much credit."

For full particulars, address 13d

G. W. Stanley & Bro., Wyoming, N. Y.

I WILL SELL

From June 15, until Sept. 15, good Italian bees at \$1.25 per pound. Nucleus colonies, 3 frames, L. size, at \$3.25 each. Dollar queens to accompany the above, \$1.00 extra. All my queens are reared from imported stock. Safe arrival and satisfaction guaranteed.

J. M. YOUNG,
13d Rock Bluffs, Cass Co., Neb.

CARNIOLAN QUEENS.

I have just Received a Queen from Carniola, and will raise a few Queens of this Stock in my Italian Apiary at once. The Carniolans are Handsome, and Undoubtedly the Gentlest Bees known. I will have about One Hundred Queens ready to Mail about July 20. Safe arrival Guaranteed, at One Dollar Each.

13d JAMES H. MORRISON,
OXFORD, CHESTER CO., PA.

BEES AND QUEENS ON HAND.

Up with orders to date. 1 pound bees, one comb brood, and "\$" queen, all for \$2.50. Fdn., 45c. to 55c. June 25, '85. OLIVER FOSTER, Mt. Vernon, Linn Co., Ia.

WANTED. A competent and reliable man wants a position in an apiary; is also a first-class carpenter. Best of references given and required. Address
F. C. ELISON,
13d SMITHPORT, MCKEAN CO., PA.



Vol. XIII.

JULY 1, 1885.

No. 13.

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NOTES FROM THE BANNER APIARY.

NO. 67.

SEPARATORS AND "FEEDING BACK."

LAST April we received a letter from which we make the following extract:

In GLEANINGS for April 1st you say: "I have been quite enthusiastic in explaining how to dispense with separators, and have shown by my *works* that first-class honey *can* be raised without them." This called to my mind a statement made to me just after the adjournment of the convention last December at Lansing. It was made by some friend whose name I did not retain, but it rather threw a damper upon my enthusiasm. The statement was, that he had seen the man who bought your honey crop of 1883, and had, I think, also seen the honey, and that some of it was *badly* "bulged." I have also heard this story from other sources, and have been afraid to *try* to get along without separators. I hope this report may not be true; but if it is, some of us would be glad to hear the whole facts in the case.

We replied, in substance, as follows:

Yes, my friend, it is *true*, that some of that honey was "bulged." When the convention was held in Flint, some of the members went and saw the honey, and, as you say, "we have heard this story from other sources." The "whole facts in the case" are, that we were that year experimenting in "feeding back," and the result was quite a number of "bulged" sections. The honey that we raised without "feeding back" is as straight as could be desired; and so few bee-keepers are experimenting in feeding back that we have never thought it worth while to publicly explain.

It seems to be the fashion nowadays among some apicultural writers, to wish to "put on record" some of their prophecies. If, in after years, things turn out differently from what is expected, the predictions will have been forgotten; if Mr. Prediction guesses right, he can then revel in a triumphant "I told you so." Well, here goes: "If 'feeding back'

is ever made a success, separators will be needed." When bees take their food from a feeder, they behave differently than when they collect it from the flowers. When feeding back, bees build comb in every nook and cranny. They not only "bulge" the combs in the good old-fashioned way, but they even build little mounds, or projections, upon the surface of the combs; do it, too, in such a reckless, unreasonable, fantastic way as to often cause a provoked smile. All colonies do not behave in this way, but we can never tell what to expect of a colony until we give it a trial. Feeding back is as much an unsolved problem as "wintering." There are a great many ifs, ands, and buts yet to be learned.

TOP VERSUS SIDE STORING.

We have just been reading Mr. Doolittle's article on page 377, and the item of Mr. Faris on page 313, and it seems to me that this subject should have been discussed under a different heading. It is *not* a question of wide frames vs. cases, but one of top vs. side storing. Wide frames are often used in the top-storing, tiering-up method, while some bee-keepers use a case that can be used not only on top of the brood-nest, but at its side, or even in its center; hence, in our opinion, there is no point to the assertion of Mr. Doolittle, that "those who have decided wide frames are not the things to use will never fully realize the possibilities of bee-keeping." There is no question but that wide frames possess some advantages over cases, and *vice versa*. Were we to adopt separators we should certainly use wide frames one tier of sections high, and tin is the stuff for separators. Mr. Doolittle contracts the brood-nest, and secures excellent results; *we* do the same with like results; but instead of putting sections in the space left after contraction, we simply annih-

late this space, or, rather, transfer it to the surplus apartment *above* the brood-nest. It is the experience of some bee-keepers, that by this method just as much honey will be secured with less labor.

W. Z. HUTCHINSON, 50-72.

Rogersville, > Genesee Co., Mich.

Friend H., I find about the same thing in feeding back that you mention, although, as you say, some colonies will do better than others. Another thing about the feeding-back business is, that I have never seen any feeder yet that would induce bees to take as many pounds of honey day after day as they frequently gather from the fields during clover and basswood bloom. I do not know what the reason is, but they will start in at first and take perhaps ten or fifteen pounds of honey in 24 hours. The next day they will seem to be a little tired out, and won't do so well, and every day succeeding they will be a little "lazier" still. I have fed a single colony as much as 100 lbs., perhaps, to get it stored in sections, but it took a much longer time to do it than where 100 lbs. were gathered from the fields. Unless the work is done when no honey is coming in, you may be the loser, for the colonies that are fussing with feeders will neglect and lose any thing that may be had from natural stores.

REDUCTION IN FREIGHT ON BEE-KEEPERS' SUPPLIES.

FRIEND BOYLSTON TELLS US WHAT HE HAS ACCOMPLISHED, AND HOW HE DID IT.

MR. EDITOR:—I went to Atlanta on Wednesday last, and appeared before the Rate Committee of the Southern Railway and Steamship Association. Mr. Virgil Powers, Gen'l Commissioner, was in the chair, and the following members of the committee were present: Mr. Sol. Haas, Traffic Manager of Associated Railways of the Carolinas and Virginia, Richmond, Va.

Mr. Jos. M. Brown, G. F. Agt. of the Western & Atlantic R. R., Atlanta, Ga.

Mr. E. R. Dorsey, G. F. Agt. of Ga. R. R., Augusta, Ga.

Mr. J. R. Ogden, G. F. Agt. of E. T., V. & Ga. R. R., Knoxville, Tenn.

Mr. Geo. R. Knox, G. F. Agt. Nashville & Chattanooga R. R., Nashville, Tenn.

Mr. S. B. Pickens, G. F. Agt. So. Ca. R. R., Charleston, S. C.

Mr. G. A. Whitehead, G. F. Agt. Central R. R. of Ga., Savannah, Ga.

Mr. J. M. Culp, G. F. Agt. Louisville & Nashville R. R., Louisville, Ky.

Mr. C. A. Sindall, Secretary S. R. & S. S. Ass'n, Atlanta, Ga., and quite a number of gentlemen from the different railways south of the Ohio, and from New York, who had come to attend to various railroad matters. I was personally acquainted with each and every one of them, and the room was full.

The first question taken up was proposed changes in the classification, and this occupied about two hours. Just as they were about to close I preferred my request—had my classification of bee-products and bee-keepers' supplies all ready, and handed it in. The nature of it had hardly been an-

nounced before it was echoed by a general chorus of laughter, and a serious attempt to ridicule it was made. One member who doubted his ears wanted to know if he really heard aright, and whether I was really in earnest in making the request. I at once frowned down all attempts at levity, and said I appeared before them by direction of the Congress of Bee-keepers which had recently met at New Orleans, and, as one of them, demanded that our requests should receive that same earnest and respectful hearing as was accorded to a representative of any other 300,000 Americans who were doing business in the land; and I then stated our wants, the magnitude of the business, and the growing importance of the industry. Finally on motion of Mr. Haas, seconded by Col. Dorsey, my proposition was carried as a whole, and I got all I asked for. Does it suit you? If not, let me know, and I will do all I can to better it.

Bees in hives—owner's risk, 1st class; carrier's risk, twice 1st class.

Bee-hives, empty, set up, 1st class.

Bee-hives, knocked down, crated, class A.

Bee-hives, knocked down, car load, 5c less than class A.

Bee-smokers, boxed, 1st class.

Honey in bbls. or kegs, owner's risk, 6th class; carrier's risk, 5th class.

Honey in glass or tin, packed, owner's risk, 3d class; carrier's risk, 1st class.

Honey in comb, boxed, owner's risk, 3d class; carrier's risk, 1st class.

Honey-extractors, crated, carrier's risk, 1st class.

Honey section boxes and frames, crated or boxed, owner's risk, 4th class; carrier's risk, 3d class.

Wax-extractors, crated, 1st class.

Wax comb foundation, 2d class.

If you will notice by examination of the classification I send, honey has been placed same as syrup; bee-hives set up, same as empty boxes; bee-hives knocked down, same as barrel-staves or box material in bundles; section boxes and frames, same as wooden butter-plates, etc.

The classification applies between all points named in the rate-sheets I send you, and is the one in general use for local shipments on nearly every road south of the Ohio and east of the Mississippi, and on all the coastwise steamers and on all the river boats in Florida (I hope friend Hart is happy).

This is a good start; and if the bee-associations in the North and West will only follow it up they will succeed likewise. I will send you fifty of these new classifications as soon as printed, that you may put them in the hands of bee-societies, to be used as an example for your neighboring roads, provided always that you need them, and that you approve of the action I have taken.

If you think of any thing which has been omitted, let me know and I will do all in my power to make it more perfect.

S. C. BOYLSTON,

Gen'l F. & P. Agent, C. & S. R. R. Co.

Charleston, S. C., June 4, 1885.

Friend B., you have done your part excellently. I should say; and as I said in my editorial last month, I think the bee-keepers of the land owe you a vote of thanks. The rates on bees in hives are lower than I expected; but they are not often sent as freight, so far as I know, although we once sent one shipment of a considerable size by freight, and it went all right. Your rates

are about the same that we obtain on most of our roads here in Ohio; but when we strike other roads in different States, a great many times they will charge first class or double first, when it ought to have been third class, and make, as an excuse for it, that there is no "rating."

DEATH FROM EATING POISONED HONEY.

IS IT FACT OR FICTION?

PLEASE read the inclosed item, which was telegraphed all over the country, in regard to the so-called honey-poisoning by eating honey impregnated with gelsemium from yellow jessamine. It is said to have caused three or more deaths. Do you think it possible? Suppose we call on Prof. Cook, or some able botanist, for a definition of gelsemium of yellow jessamine, and what latitude the plant is chiefly confined to. Such reports are damaging to the honey trade, to say the least; and being interested to a considerable extent in that line I should like to have such a statement as that refuted if possible.

Nashville, Tenn., June 11, 1885.

H. B. GEER.

WHOLESALE POISONING; TERRIBLE RESULTS OF EATING HONEY IN A SOUTH-CAROLINA COMMUNITY.

BRANCHVILLE, S. C., June 6.—Mrs. Jacob Dukes gave a negro servant some honey, which the servant gave to her four sons for dinner. Almost as soon as they had eaten it they complained of blindness and dizziness. In 10 minutes one had died and within half an hour two more had died. By this time the report of the affair had reached Mrs. Dukes. Her entire family were just experiencing the first symptoms of the trouble from which the negroes had died. Dr. Ott was sent for, and by applying antidotes the family was saved after great suffering. Half a dozen other families who had been supplied with this honey were similarly affected, and it was only by energetic work that there were not 20 deaths instead of three. This event explains two other deaths which took place in this neighborhood on Monday. An examination of the honey showed that it was impregnated with gelsemium from yellow jessamine, which has been the cause of many deaths heretofore of persons eating wild honey.

On receipt of the above I mailed it to Prof. Cook, as our correspondent has suggested, and below we have his reply:

Dear Mr. Editor:—I was much interested in reading the article from Branchville, S. C., and also the letter from H. B. Geer, in reference to poison honey. If you will refer to the *American Bee Journal*, 1881, p. 22, you will see that my attention was called at that time to a somewhat similar case, which, however, was less serious in its results. Possibly the outcome might have been quite as terrible had not a good physician been at hand. To summarize that case: Mr. C., a New-York bee-keeper, sent some honey to some friends in New York city, who were made seriously ill by eating it. The honey was sharp, like pepper, produced coughing, and soon severe nausea, violent vomiting, loss of vision, and a chill. A physician being at hand gave an emetic, and followed this by whisky. Soon the persons were all relieved. I secured some of this honey, and proved the stinging taste and the throat irritation; but being averse to whisky remedies, I carried the experiment no further. Mr. C. could easily select out all this honey by the sharp peppery taste. He said it was certainly gathered before July 10th. I found this honey was also bitter, and that heating

did not volatilize either the bitter or sharp properties. In the article referred to, as also in my Manual, p. 285, I give other cases of this exceptional honey poison, and refer to some common American plants which are supposed to be the source of such honey. As before stated, it seems to me very doubtful if these plants are the source of poisonous honey. The plants are common and abundant: the poisonous honey, rare and very exceptional. I think the same is true of yellow jessamine (*Gelsemium Sempervirens*). It is a common and much-prized honey-plant of Virginia, and States south of that; and were its nectar secretions poisonous, we should have learned the fact years ago. Thus while I can say with considerable assurance what the poison is not, I am at a total loss to say what it is. From the experience of the past, however, I think we have no reason to fear any serious trouble from this case, or the report of it. Any cases, so sporadic, never have any special weight or influence.

Let me add to the within, that the *Gelsemium* of therapeutics is an extract from the flowers, leaves, and roots. The tincture is said to induce stupor. It is used as a nerve and arterial sedative, and in large doses is a poison. That this was found in the honey, if true (possibly the whole report is a sensational canard from some unscrupulous reporter) was no fault of the bees, but of some one who had malice in his heart. The nectar which plants secrete does not partake of the qualities of the tissues.

A. J. COOK.

Agricultural College, Mich., June 20, 1885.

Friend Cook, I think you have struck the root of the matter in your concluding words. Upon first reading it, I was impressed with the idea that it might be a newspaper canard, something about like the one about all the liquid honey in the market being made from sour apple-skins, etc. Now, then, if we have a subscriber living near Branchville, S. C., I will pay him for his trouble for investigating in regard to the matter, and giving us the truth of it. We want the truth, no matter where it hits; and if there is not any truth in it we want to know that, no matter what it costs to get at the truth. We will mail the inclosed slip to the postmaster, and ask him if he can give us any information in regard to it. Meanwhile let us get at what other facts we can.

MRS. HARRISON AND SOME OF HER TROUBLES.

YES, TROUBLES EVEN DURING THE MONTH OF JUNE.

IF frames of eggs and larvæ are frequently removed from a colony, will it cause the queen to be superseded? I have sometimes thought it did. I have used all available means to build up my bees this spring; but to-day I have been trying to see how many I could kill. Inconsistent, is it? I have come to the conclusion that there was a score or two of bees that spent their time in watching around the kitchen-door to sting some person, and at last forbearance ceased to be a virtue. Armed with a palm-leaf fan, and a large dishpan with about two inches of soap-suds, I sallied forth to conquer. In a short time I had more than a score in the suds. These bees all looked alike, were yellow-banded, but had black, sharp-pointed tails. I do not believe those bees ever went in

search of honey, but were those dyspeptic kind father Langstroth speaks of in his book.

White clover is now (June 18th) blooming everywhere, but as yet is yielding little or no honey. Bees so far have made only a living. There is very little swarming, and the queen-cells are very diminutive—mere excuses for royal cradles. There has been a good deal of cool rainy weather, and the fields are white with clover; but on chewing the heads, they lack sweetness. The nights are cool, with very abundant dews, and bees are not seen on the clover until afternoon.

We have some spider lilies that have been transplanted from the woods, and bees work upon them daily; we notice that they are favorites with the bees every year. The locust yields honey in this locality this year. Mrs. L. HARRISON.

Peoria, Ill.

My friend, it is a fact that colonies are very much crippled by taking eggs and larva when they are too weak to spare them; and it is such weak and crippled colonies that seem to be up to such tricks as balling and superseding queens, right when they ought to be gathering honey.—I have sometimes thought, with yourself, that the bees that buzz about and sting, or pester a body even if they do not sting, are a sort of quarrelsome set, that are not of much use any way. My plan is to knock them down with a comb-guide; and after knocking down two or three I have secured a little peace. It does seem sometimes as if it were only about half a dozen bees in an apiary of a hundred colonies that annoy and worry one. It is rather bad business, however, to be seen killing your own bees. — The lack of honey in the clover is caused by the abundant rains which I suppose you are having as well as ourselves. When there comes a lull in this wet weather, however, I think you will find the honey begins to pour out from the clover to your full satisfaction. It usually takes half a day, and sometimes a whole day, after a drenching rain, for the clover to begin to secrete honey again.

BEE BOTANY,

OR, HONEY-PLANTS TO BE NAMED.

I INCLOSE a plant which grows plentifully here on wild prairie land which has been closely pastured, and on which the bees work freely, seeming to prefer it to dandelion, which is almost the only other honey-plant in bloom here at present. Can you tell me its name? I send a plant in bloom, and a stalk which has gone to seed, both of the natural size. BURDETT HASSETT.

Howard Center, Ia., May 22, 1885.

Prof. Devol replies:—

EVERLASTING.

The specimen of plant from Burdett Hasset is *Antennaria plantaginifolia*, Br., commonly called Everlasting, or Mouse-ear, a small plant 4 to 8 inches high, covered with whitish down, and bearing fadless heads of white and purplish flowers. Found mostly on knolls and side hills, on poor soil, in thinly wooded places. W. S. DEVOL.

I inclose in this letter a twig from a bush that grows about 6 or 8 ft. in height, and is covered with bees during the entire period of bloom (about three

weeks). This morning I found on a single bush 15 or 20 bumble-bees and 20 or 25 honey-bees, from which I think it must yield a good deal of honey.

Traer, Ia., May 26, 1885.

A. D. MCKAY.

Prof. Devol says of this:—

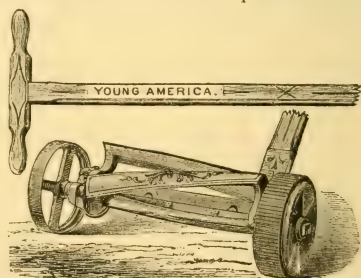
This is a specimen of *Lonicera ciliata*, Muhl. (Fly Honeysuckle), a well-known honey-plant found in woods, and blooming in May and June. It grows 3 or 4 to 5 ft. high, and when in bloom is covered with its pretty straw-colored flowers. W. S. DEVOL.

Columbus, O., June 22, 1885.

KEEPING THE GRASS DOWN AROUND BEE-HIVES.

ALSO SOMETHING ABOUT LAWN-MOWERS.

ISN'T it true, that a neatly kept lawn is evidence of an intelligent and progressive spirit possessed by the owner? A lazy and shiftless man seldom has any lawn at all. Many whose occupation keeps them indoors a great part of the day, derive health and enjoyment in taking care of a lawn, even though it be just a little one. And what makes life pleasanter than to see pleasant homes as we happen to pass along our country roads or village streets? Where you see a handsome lawn outside, you will almost always find the magazines and progressive journals of the day inside. One impediment in the way of these handsome lawns is the expense of a lawn-mower; and as we have spent some little time in looking the matter up, and trying the different kinds, especially those adapted to mowing around bee-hives, I thought I would tell you the result of it. The one pictured below



seems to please us best of all for working in the apiary; and another thing that pleases me is, that it costs only \$6.50. Even at this low price we like it better than some that cost twice as much. It does not make a very wide cut, it is true; but it runs so easily that the children can do the work. Its simplicity is an advantage in the apiary, for it will run up close to the entrances, and it will cut weeds and grass of a considerable height without difficulty.

Friend Fradenburg, as you may remember, prefers rabbits to lawn-mowers; but the rabbits might mow down something you don't want mowed down. We can furnish them promptly at the price named. As the machine weighs but 50 lbs., it will probably go cheaper by freight.

BUSINESS MEN AND BUSINESS METHODS.

MRS. CHADDOCK GIVES US AN ENERGETIC STIRRING-UP IN REGARD TO PROMPTNESS.

ON page 259 of April 15th GLEANINGS is an advertisement, that reads as follows: "Bees by the pound. From April 20 to May 20, \$1.00. Dollar queens to go with bees as above, \$1.00 each" (see advertisements). Brother Phillips and myself sent, on the 20th day of April, for four 1-lb. packages of bees with a dollar queen in each package; sent him the money, \$8.00, and then waited for the bees to come. We live five miles from town; and after a week had passed we began to haunt the postoffice and express office to find out about those "Tennessee bees." We took it by turns. I went in one day, and Brother Phillips would go the next; and time wore on without hearing a word from them till yesterday, the 8th of May. Then we got a letter from Mr. Gates, saying he can not send us four packages with a queen in each, but can send us two 3-lb. packages with 2 (or is it a 3?) queens; or, if we prefer, he will return the money, if we will send stamps for the registry fee.

Now, this I call business with a vengeance. Keep our money this long, and tell us he *can not* live up to his agreement, but will do something else—and, crowning stroke of all, make us pay registry fees both ways on the money, when his not doing as he agreed to has probably cost us dollars instead of cents.

I sent to you once for five "dollar" queens; I sent the order on Monday morning, and the queens came to the postoffice here on Wednesday evening, just like throwing a ball to you and you tossing it back again; and yet people complain that they have queens to sell, and no one will buy them. Perhaps they wait too long, and then offer to do some other thing.

I used to raise early vegetables for market—peas, potatoes, beans, cabbage, lettuce, radishes, strawberries, and other small fruits; and if I promised to furnish a man with berries on a certain day *Lal-weys did it*, even if I had to go out among the neighbors and buy them up. One time, I remember, I was selling strawberries on a certain cold Saturday. Mr. Chaddock was with me (generally I went alone); and while I was in a store delivering berries he sold all that were left, and just then a man came up and said I had promised him a gallon for Sunday, and I went into the store and bought back a gallon, paying ten cents more on the gallon than I would get of him; and I would do it in any business that I expected to carry on. My motto always was, *perfect satisfaction*.

Another time I engaged ten bushels of early potatoes, at one dollar per bushel, in a little town four miles away, and they nearly all agreed to take them, on condition that I would bring them in on the morning of the 4th of July, as there was to be a celebration there that day, and they all expected to have company, and they wanted new potatoes for dinner. I promised to take them, and thought it would be easy enough to fill the promise, as we fully expected to go to the celebration; but Mr. Chaddock had a field of wheat that was spoiling to be cut, and he found that he could get help, and he would not go to the celebration, and of course, I had to be at home to cook for the ten men. The hired girl had been promised her "liberty" on that

day, and that promise must be kept. Well, the hired girl and I dug the potatoes late the evening before, and I got up at two o'clock and ate a cold snatch while Mr. Chaddock got the team ready, and I was in Ipava just as the sun was rising and the merry bells were ringing in the "glorious Fourth."

I delivered the potatoes (half a bushel at each house), and got home at 8 o'clock; in plenty of time for the hired girl to start for the celebration with her beau, and I had ten dollars in my pocket to pay for my work. The next week, potatoes were a drug at 25 cts. a bushel. The early bird catches the worm.

MAHALA B. CHADDOCK.

Vermont, Ill.

A little more charity, my good friend Mrs. C. Friend Gates is one of the best men we have, and I think the trouble comes (or I suppose there is not very much trouble) from the different ideas you and friend Gates seem to have as to what is straight business and what is not, because you both look at it from a different standpoint. There are quite a few of the brethren whom I suspect would feel pretty glad if they could get their money back by paying the registry fee. I wonder if I can be enough of an outsider to take an unbiased view of this whole transaction. You are both good friends of mine, and for the life of me I can not tell which of you I like better, therefore I am sorry to see you have even small differences. Friend Gates does a large business in shipping bees; and unless he has quite a little help and a good deal of capital, he is liable to have more orders than he can manage. Now, it is no profit to him to get money and send it back again; in fact, he has all the trouble and correspondence, and not a cent profit. The notice in GLEANINGS of those who have untested queens and bees for sale reads: "They also agree to return the money at any time when customers become impatient of such delay as may be unavoidable." Now, friend Gates naturally decided that, under such circumstances, the sender ought to pay for the return registry fee; and although I can not quite agree with him, I can not see that he is so very unreasonable. I need not state the case from your point of view, for you have stated it pretty well yourself. A great many of these things can be made perfectly easy of adjustment by having an agreement beforehand. Suppose friend Gates say in his price list, "When my customers become impatient of unavoidable delays, I will return their money, providing they pay the return registry fee." This would have made it all right. Again, you see he agrees to fill the order, providing you will permit him to substitute bees for queens, because he is, like the rest of us, short of queens just now.

I am much obliged to you for the commendatory notice you give us; but, my good friend, we do not always send a queen right back, like "throwing a ball and tossing it back again." I wish we did, and I do not know any way we can advertise our business so well as to have queens enough ahead so we can always do this. This present season, in spite of all we could do, we have been short of queens, and some of the brethren (may be some of the sisters too) feel a little bitter toward me even yet, I suspect.

Your little story about the way you kept your promise given to each of your patrons is a good point; and if you have done that right straight through life, I wonder that you have not built up a big business. It is true, my friend, that a big business can be built up in almost any thing by letting the world know that you are prompt and reliable; yes, you can get more than the market price for every thing you want to sell, if you make your name "gilt edge." Your illustration about the importance of having your produce in market promptly, hits the point exactly; and I wish we could make this matter catching, like the measles and smallpox. Why, it is almost a matter of life and death; and promptness not only makes a man valuable here in this world, but it fits him for a better world after this one is finished.

Now, lest any one should get a little prejudiced against friend Gates in this matter, from what I have allowed you to say about him, I want to say he is one of the best and most reliable men that I know of; and I should not be very much afraid to say that every transaction he does not make satisfactory I would; and as he works on a small margin (he sells bees and queens a "good bit" cheaper than we do, you know), may be one of his business rules will be that his patrons must stand the expense of sending the money back, when orders come so thick he can't fill them all.

THE SIMPLICITY HIVE.

THE STAND IT IS NOW TAKING IN BEE CULTURE.

I THINK I am safe in saying, that there are now more Simplicity hives in use than any other one kind in the world. I do not mean to say that we have made them all, by any means, but that there are more hives made on this principle than any other. When I started out (nearly fifteen years ago) to make them, the idea I had in mind was something like this: It seemed to me there was a great need for some simple form of hive that could be made of a few simple pieces; and these pieces were to be so made that they could be combined so as to give a hive of any capacity, from a nucleus for queen-rearing up to a hive capable of containing the entire progeny of *any* queen. The hive was to be made of only two pieces—a body and a cover. When I use the word *hive*, I mean the outer shell, or covering, without reference to the inside furniture. That we might get along with these two pieces, and no more, I decided that the cover and bottom-board should be exactly alike, and interchangeable. Now, the plan was (and is) to have these two simple pieces made by such accurate gauges that they would always work together, no matter where or by whom the bodies and covers were made. To accomplish this, the well-known iron gauge-frames were devised, and are still used. When anybody sets up a bee-hive shop, if he gets one of these gauge-frames made accurately, to start with, he can be sure that the hives he makes will work interchangeably with the hives made

by any other supply-dealer using these same gauge-frames.

Well, after we began making these hives by the thousands, there began to be calls for a little variation, and I set to work trying to see if we could not accommodate the friends with their different tastes and notions, and still have the hive "Simplicity" enough so it would work interchangeably, as I have told you. The *body* of the hive is just about the same that it was when I first made it, with the exception of adding a permanent bottom-board. For obvious reasons, when this permanent bottom-board is added, it seems well to add, also, a portico, after the pattern of the well-known Langstroth hive, with its portico. To distinguish this permanent bottom-board hive from the regular Simplicity bodies, we call it the Portico hive, and the Portico hive is always used for the bottom story; in fact, it can not be used for an upper story, because you can not get the bottom off. Any Simplicity-hive body, however, will fit on top of it so as to make a two, three, or even four story hive. A good many of the friends who use the Simplicity hives prefer these portico bodies for the bottom story. Those who prefer a movable bottom, however, generally use a cover for a bottom-board, adding what we call an "alighting-board" to make it convenient for the bees and their owner. So you see we have only two kinds of bodies—a portico body with its permanent bottom, and the ordinary Simplicity body, without any bottom at all.

Now, those who first become acquainted with the Simplicity hive almost invariably object because we call a single body and a single cover a *hive*. They claim that a hive needs a bottom-board. But this complicates matters, as I will show you. Suppose a man purchases for his first hive a body and two covers; or, if you choose, suppose I should say that every hive should have two covers, that one might be used for a bottom. If the hive-maker has them put up in packages in this way, when you want a hive you would, of course, have one body and two covers. Pretty soon your swarm increases until it needs more room. Would it be convenient for you to buy another body and two covers to give the necessary room? By no means. All you want is another body to make your hive a two-story hive. Now, suppose the manufacturer sells one body and one cover. A swarm comes out, and you go to the shop and get a Simplicity hive, consisting of one body and one cover. Almost every dooryard affords a piece of board that will do temporarily for a bottom-board. When the swarm wants an upper story, you go to the shop and get another hive, consisting of *one body and one cover*. Now you are rigged complete with a two-story hive. Well, suppose the manufacturer makes a discount on a crate of ten hives bought all at once, what shall constitute this ten-er-ate? Why, I should say (and I have had long experience, mind you), a ten-er-ate should consist of ten bodies and ten covers; that is, they are ten one-story hives, or, if you choose to put it so, they are five two-story hives. When they are just two-story you have all the room you need.

If your colony gets strong enough so you use some of the hives three stories high, you have an extra bottom-board, or an extra cover, as you choose.

Now a word in regard to prices. I started out with the idea that the body and cover would cost about the same, and that good ones made of a fair quality of lumber should be afforded for about 25 cts. in the flat—perhaps a little less where a crate of ten is purchased at once, or may be a little more where a customer wants a little better quality of lumber used. I believe this has got to be a rule the world over, pretty much; that is, where *our* money is used—about 25 cts. for a cover, and about 25 cts. for a body; nailing and painting extra, according to circumstances. Nothing very complicated in the above, is there? Well, the complication comes in pretty soon. Lumber checks and splits and decays, especially if not kept well painted; and in the South the heat of the sun is a pretty severe ordeal for any sort of woodwork; therefore a tin roof becomes desirable; and one thing in favor of a tin roof is, that comparatively cheap lumber can be used if we have a tin cover; for boards that will work 16 or 17 inches wide, without knots or checks, cost a good deal of money. And not only can we use cheap lumber, but where we have a tin cover over the lumber, each board may be split in *two*, and be plenty strong enough, with its metal covering. I have tried many times, and have even sent to the tin-mines of England to get figures on sheets of tin, to see if I could not add a tin covering, and still stick to the old price. It can not be done, friends—not yet; but we have got so near it that, for just *six cents* extra, we can give you a tin covering that will last a lifetime, if you keep it painted. Now, most of you would jump at the conclusion, from what I have said above, that we can sell a sheet of tin that would cover a Simplicity hive, for six cents; but we can not do it. You will see *why*, from my remarks above. The tin *alone* is worth 9 cts., or a little less by the box. Another thing: While the tin cover is exactly what is wanted for a *cover*, it is not needed, nor, in fact, wanted, for the pieces you have for the bottom-board. It would be cold for the bees' feet, and might give them the "toothache" in frosty weather; so where we put up ten crates with tin for the covers, we can just as well omit the tin for those that are to be used for bottom-boards; but as we do not know how our friends who are to receive them may want to use them, we are obliged to make a separate table of prices for hives where covers are to be lined with tin.

Now, a good many want a cover that has capacity enough underneath to hold a case of sections; and by using half-inch lumber for it, and saving the expense of wide lumber (for a 1½-story cover is made of light narrow boards), we have succeeded in making such a cover at the same price as the ordinary Simplicity cover made of *No. 1 lumber*. But this cover will not do for bottom-boards either, so you see we have to have a separate table where this half-story cover is used. Now, then, the above seems to accommodate almost everybody, in the way of a

bee-hive. It includes two kinds of bodies—a permanent bottom-board body which we call a Portico hive on our list, and the ordinary Simplicity body. It also includes three kinds of covers—the Simplicity of wood, the Simplicity cover covered with metal, and the half-story cover. But all of these work together perfectly and indiscriminately. We can put any kind of a cover on any kind of a body, or any kind of an upper story on any kind of a lower story, and you can enlarge at pleasure by piling them up. But unless these things which I have mentioned are taken into consideration, a new hand is apt to get sadly puzzled over our tables in the price list. Those who have used Simplicity hives for years, have, I believe, made no mistakes in ordering hives.

ON THE HIVES CANADIANS USE.

WITH ALSO A KIND WORD SPRINKLED IN HERE AND THERE.

THE June number of GLEANINGS is at hand, and I read with much interest the genial letter of my old friend W. F. Clarke. His little remark in reference to my "experimenting with the Jones frame" calls for some explanation; and perhaps my experience may prove as profitable to others as that of others has frequently been to me. Far beyond all have I been benefited by a gentleman of Medina (A. I. Root), whom I engaged ten years ago to experiment for me in his own apiary, and report the results every month. He has never yet failed in doing so. He tried to convince me that the Langstroth frame was best for a northern climate, but has not yet done so, although his experiment last spring was certainly a successful one. He tried raising bees in hotbeds; that failed; just as he had me about convinced that manure and glass were going to do it, then the conservatory experiment also failed. Chaff hives of formidable dimensions next came to be the long-expected remedy for wintering and springing troubles; that, the winter of '80, '82, and '84 proved a snare. All these years I have been trying to profit by the line on which Mr. Root kept moving along, but seldom followed his lead, as I think such a man has a line which he alone can follow most successfully. This I think will explain why so many different sizes of frames are in use.

Several years ago, having a number of Jones hives in use I became satisfied that they were too deep for spring management, and the experimental stage is now so far past with me that I have 100 stocks in 9-frame hives, size of frame being 10x14, inside measure. I understand that Mr. Jones, who furnished my hives this spring, is now constructing a similar one, "reversible" in every point, which I have no doubt will be largely used as the coming hive. Is it not the case, that those who have lost most heavily during winters past have used the Langstroth frame? I refer more especially to open-air wintering, as I believe the L. frame and hive will winter bees in special repositories or cellars as well as any other hive used. But, how about springing? The essential points to me of successful wintering of from 50 to 150 stocks each winter, are plenty of good honey (not sugar, unless as a compulsory supplement), setting into a good warm cellar before severe frost sets in in the fall, 6-inch en-

trances open, sheet of factory only over the frames, perfect darkness, quietude, even temperature (about 44°). If these conditions are observed, I do not greatly care whether the cellar is damp or dry; they will "hibernate" very comfortably through all the changing seasons outside, quite as oblivious of passing time and winter's storms as those bats of the Mammoth Cave A. I. Root described to me the other evening.

Last, but not least, when you became a Christian (how well I remember when that number came) you undertook an experiment which has proved the greatest success of your life, and I trust for one you will still from time to time give to your great circle of readers a leaf from your life's chapter, as it goes on. How I wish our friend Mr. Jones, now that he has given us a *C. B. J.*, would "go and do likewise"! J. C. THOM.

Streetsville, Ont., Can., June 10, 1885.

Please accept my heartfelt thanks for your very kind words, friend T. May God help me to let my light shine in such a manner as will be most helpful to my fellow-men!—Speaking of the L. frame, I hardly believe you are correct, my friend, in saying that those who have lost most heavily have used the L. frame. The A. B. J. has given several tables in regard to losses, comparing the L. frames with other frames. If I am correct, it did not show any thing in favor of deeper frames.—I suppose your concluding sentence means that we should be glad to see Bro. Jones give us something in his paper, a little in the line of my moral talks; for I am happy to tell the friends who do not know it already, that D. A. Jones is not only a good sound man in every respect, but he is also a Christian, and a very prominent helper in the cause of Christianity and the upbuilding of churches and Sabbath-schools, and also in discouraging saloons, intemperance, and iniquity of every kind. I presume Bro. Jones will pardon me for telling this much of what I know.

FLORIDA.

ITS ADVANTAGES AND DISADVANTAGES FOR BEE-KEEPERS.

Concluded from last issue.

THE first questions one will naturally ask who desires to change his location are, What are the advantages and disadvantages of the proposed new location? I will try to answer these questions as well as I can, so far as Florida is concerned; but I shall try to be the most particular in telling the disadvantages, because the advantages have been told over and over again by writers from that State, who usually forget to tell the other side. Some, like Mr. Hart, tell both sides; but the majority see only one side.

First among its advantages is the unrivaled climate, probably the finest in the United States. Contrary to the usual rule in warm climates, winter is the dry season and summer the wet, the line between the wet and dry seasons being much more marked the further south in the State we go. This absence of much rain during the coolest part of the year, and its abundance during the warmest, is much pleasanter and more healthful than the reverse conditions would be. The absence of great

variations of temperature is also a very valuable feature of the climate, the extreme variation at New Smyrna being about 70°, from about 28° to 98° above zero, while at Cape Sable the variation is probably about 50° degrees only, from 45° to 95°. At my house here in Iowa, the extreme range is over 140°—that is, from 40° below zero to 103° above. Why the temperature should be higher in the northern part of Florida than in the southern, is a puzzle to many; but such is the fact, the extreme being sometimes 4 to 5° higher in the northern half of the State than on its southern coast. If climate only were considered, I should most decidedly prefer the most southerly location in the State that I could get. The great heat of the sun in Florida is always tempered by breezes from off the ocean or the gulf, and such sultry and oppressive days as we frequently experience in the North are unknown there.

Of course, the question of how to safely bring our pets through the winter possesses no interest whatever to a Florida bee-keeper, there being but very few days during the year but that they fly freely in the open air, and not an entire month but that they gather some natural stores.

The yield of honey that can be obtained in a good mangrove location is very large, that obtained by the bee-keepers of New Smyrna having averaged, for several seasons past, nearly 200 lbs. per colony per season. Mangrove is the most reliable and regular yielder of honey of any plant we know of, probably because of its roots always being within reach of salt water, and therefore not at all affected by drought. This is a positive and decided advantage.

I will now try to detail some of the disadvantages of living and keeping bees in Florida, and shall try to treat this part of the subject more thoroughly than any other, because it is less often written about.

The want of schools, churches, and good society is probably the most serious objection to the making of a permanent home in that State, and this is especially true with those seeking good locations for bee-keeping, as such locations are nearly all in the most unsettled parts of the State; and, what is worse, that part of the State which we suppose to be the best for bee-keeping purposes will be the last to be settled. The wilds of Florida are certainly poor places in which to raise families, at least so far as schools and the best aids to civilization are concerned.

Want of transportation is a very great obstacle; but this will, of course, be partly overcome in the future. At present the only way to reach most of the coast region is by means of small sail-boats capable of carrying a few thousand pounds at a time. Nearly all settlers on the coast who are able, own one of these boats, and they are almost the only "horses" the coast region possesses. On account of the high price of forage and grain, a much less number of horses is kept in the State than elsewhere; and whoever needs to hire team work done must expect to pay roundly for it.

Lack of mills, stores, etc., is quite troublesome. Nearly all the lumber in even as well settled a region as that around New Smyrna, has to be brought from Jacksonville by boat. Some sections of the State are well supplied with mills, but they are not frequent on the east coast yet. The Florida yellow pine makes excellent lumber for hives, and for that

reason only I think it would be best to obtain white pine from the North.

The prevalence of insects, such as fleas, mosquitoes, sand-flies, etc., is, without question, the great pest of Florida, and I have yet to see that part of the State that is free from them. A few simple precautions will usually keep fleas from troubling much. Mosquitoes are everywhere, but especially along the coast, it being a popular saying that mangrove-bushes breed them. The further south in the State one goes, the more plentiful are mosquitoes; and whoever finds a good bee location in Florida will be certain to find a first-class mosquito location also. They can be kept from troubling much in houses, by the use of screen doors and windows, and netting over the beds at night. I am told that they are excessively bad only a short time in summer, but one is never entirely free from them. Building one's house in an open, airy situation is quite a protection from them, as well as from sand-flies. These last are an unmitigated nuisance; but I think from what I could learn that they remain only a few weeks in the spring. Red-bugs and seed-ticks abound, but they troubled me very little indeed, although I was around in the pine woods and swamps while there, ten times as much as any resident needs to be. Scorpions are a needless terror to some people, their sting being but little if any worse than a bee-sting. Neither wife nor I was stung by one during our seven months' residence there, and no one fears them at all.

Insect enemies of bees are bad. Mosquito-hawks are very thick for a while in the spring, and it is yet a question as to how serious is the harm they do. A writer in one of the bee-journals lately stated that they were extremely destructive to young queens while out on their flight, sometimes destroying 80 per cent. The little experience I have had with young queens down there, leads me to believe that to be a decided overstatement, the large loss being from other and more controllable causes; but they probably do some mischief in that line.

Red ants would be a much worse pest if they were not so easily controlled. These ants work mostly at night; but after they once get commenced on a colony, they keep at it until the colony is used up, or until the bee-keeper heads them off. They have their nests in old stumps and logs, and when working on a colony they can easily be traced to their nest by the line of ants going to and from ants' nests, and all can then be effectually destroyed by fire. An energetic bee-keeper will in time destroy every ant within danger distance of his apiary. Both Mr. Olson and Mr. Hart, and, I think, Mr. Sheldon, told me that their losses had been insignificant from this source.

Bee-moths are, of course, much more plentiful in warm than in cold climates; but these have ceased to be bugbears to true bee-keepers.

The difficulty of obtaining reliable information about any special locality in Florida is quite an inconvenience. Nearly every resident there thinks his own locality is unquestionably the very best one in the State. This is quite a common state of affairs in all new sections; but I have never seen it any thing like as much so anywhere else as it is there. Ask a resident in almost any part of the State about the quality of land in his neighborhood, and he will tell you that "It is first class, good enough to raise splendid orange-groves without the aid of fertiliz-

ers at all;" but right over in the next county, south, the land is so poor it won't "sprout cow-peas," an expression equivalent to our Northern one of being too poor to raise white beans. Ask him if it is unhealthy, and he will answer that they "never have the chills," but right over in Sumter, or some other county, it is so "pesky sickly" that even the 'gators can't live there without getting the shakes. Ask about mosquitoes, and he will give a similar answer, all the time slapping with his hands, at some imaginary object, of course, between every other word. This trait, or, rather, habit, of overestimating one's own locality, and underestimating all others, is entirely too common to be comfortable; and all intending settlers should take the advice of some reliable friend there, or else wait until they know something about the country themselves before selecting their location. I know several persons who were turned away from the east coast by fabulous stories told them in Jacksonville about the mosquitoes and sand-flies of that region, but who are now satisfied they would have done much better than they have done, but for the influence of those stories.

The soil and climate of Florida are not adapted to the raising of the staple articles of food demanded by Northern appetites, such as dairy products, wheat, potatoes, etc., and these all have to be purchased from stores, of course not so cheaply as we get them north. All intending settlers want to take this into consideration when making their plans. Sweet potatoes, however, can be cheaply and abundantly raised almost anywhere in the State, as also many of our common garden vegetables. Fish are very abundant in nearly every section of the State, especially so near the coasts, and magnificent oysters are also found in many places along the coasts. The great abundance of fish is aptly illustrated by the reply of a native youngster: "Fish in summer and Yankees in winter," made to a tourist when asked what people in Florida found to live on.

I will now give some opinions or suggestions which may be of use to those going there intending to make a business of honey-raising.

Mangrove sustains an equal and I think a more important relation to bee-keeping in Florida than white clover does in our Northern sections; therefore only good mangrove locations must be sought after and relied on. I have already stated where such locations can probably be found; but others now in that State can probably give much additional information on that point.

Before going there, get all the information you can about the State at large. I think the most correct impressions I obtained were got from the writings of sportsmen, who have no interest in the State, except as a field for sporting and cruising. The best of these books I have seen are "Camping in Florida," by Charles Hallock, of the Forest and Stream Publishing Co., and a later work, "Camping and Cruising in Florida," by Dr. J. A. Henshall, of Cynthia, Ky. Quite a number of bee-keepers have written short articles from that State, some of them valuable, some worthless; but decidedly the most voluminous on bee-keeping subjects that we have has been furnished by Mr. Hart, of New Smyrna, who, in my opinion, is an uncommonly fair and candid writer. Persons settling in Florida must expect to have to rely mainly on their own judgment in selecting proper locations, etc., and

that State is like a new book on a new subject, and can not be learned in a brief period of time. If possible to do so, I would earnestly recommend all intending settlers to live for as many months as possible with families who are on their homesteads. More can be learned this way about the details of Florida life than by any other means I know of.

There has been so much romance thrown around Florida by writings and traditions, and various land agencies have sent out such magnificent descriptions of its climate and scenery, that nearly every one feels bitterly disappointed on entering the State. Its flat, sandy pine lands and swamps look dismally barren at first sight, and few indeed but feel very much disappointed during their first month's residence there. The unlovely and unwritten-about side of Florida first appears; the other and more pleasant part being appreciated only after getting acquainted. Unless this important fact is borne in mind by settlers, many will leave the State in disgust before they are capable of forming any correct judgment of what they do want. I remember now of meeting only one person while in the State who was satisfied during his first month there, and I do not now remember a single person who had resided there three or four years who had any desire to permanently remove north. This is an almost unheard-of state of things in any other new country. This looks as though Florida were like some people we know—not very impressive at first sight, but who stand acquaintance well—one of the highest compliments that can be paid any one.

Pioneering in any new country means a certain amount of hardship and privation. Florida pioneering is no exception to the general rule, and none but those whom nature or native resolution has fitted for such work should try.

The impression I have formed about California is, that whoever makes a business of bee-keeping there has to isolate himself among the mountains more or less, and contend with many difficulties and hardships. I judge that these difficulties, hardships, and the isolation, will be found no worse in the honey districts of Florida than they are there, while a good honey location in Florida has one very marked advantage over California—that of a much more even annual yield of honey. The mangrove has its roots in tide-water, and can not be affected by drought, and is certain to give a good paying crop of honey every season.

I hope to be able some time to investigate the resources of the southern coast of Florida; but friend Hart and others are likely to be able to do it before I shall be. Let us hope that some one will soon do it thoroughly.

All that we now know of the honey resources of that 300 miles of wild coast is, that the possibilities—yes, probabilities—of the future honey production of that region are as immense as our actual knowledge of their extent is at present infinitesimal.

O. O. POPPLETON.

Williamstown, Ia., Feb. 15, 1885.

I am sure, friend P., we are all very much obliged indeed for your very candid and faithful account of this attractive field for our industry. We are not all going to move to Florida, it is true; but I believe a great many of us have in mind some form of taking a trip down there—that is, if God prospers us; and we are therefore interested in knowing

all about Florida. There is one point, I believe, in your letter, not touched, of much interest to bee-men; that is, will the quality of the mangrove honey, or any other, compare with the California mountain sage? Some of the Florida honey is very fine, I admit; but to my mind there has nothing ever been furnished from any point on the face of the globe, of such exquisite flavor, color, and body, as the finest specimens of California mountain sage. May be people tire of it after a while, and I should like to know how the mangrove honey compares in this respect. Does it "stand acquaintance," as you aptly term it, say as well as our white-clover honey of the Northern States?

GERMAN CARP, AND THEIR HABITS.

HOW TO SEE THEM IN YOUR POND.

IT was the 13th day of June before I ever had a look at our German carp; and one reason was, that I did not know how to look for them. It is with carp as it is with finding queens, in looking for eggs in cells—yes, and in finding strawberries. A good many would go and look and say there was not any queen there, or there were no eggs nor brood. Your children, or perhaps your hired help, will say your strawberries are all picked. The man who owns a carp-pond will tell you he has looked and looked, and has never been able to catch a sight of one, and yet they are perhaps visible at every hour of the day. It is this same faculty of learning to see what there is to be seen in this beautiful world of ours, that we all want to cultivate.

Last Saturday evening I sat down by the pond after the labors of the day were over, and thought to myself that, with the numbers of fish there were in that body of water, I certainly ought to be able to see at least some indications of them. The setting sun was on the opposite side from me, and every ripple and tiny wave was most plainly perceptible. Pretty soon I began to notice peculiar eddies, almost like little whirlpools, and sometimes the water would seem to boil up in certain spots; and I noticed, too, around those spots that the weeds and water-plants were swayed in an eccentric sort of way. At first I supposed this swaying was simply caused by the breeze; but pretty soon it was evident that something was nosing around at the roots of the water-plants. Yes, it was the fish, and no mistake. The pond has always been muddy, so that we can not see much below the surface. Somebody said the carp make it muddy by rooting around in the bottom. Well, pretty soon one of these eddies appeared within a yard or two of the grassy bank where I sat. Then the grass began to be jostled about near my feet. Pretty soon something like the snout of a pig appeared just above the surface of the water, and then I saw it was the mouth of one of the large fish. He was nosing around, sucking in various substances, expelling such as did not seem to suit him. Well, when I began to understand what it was I was to look for, here and there I could see movements of the water,

indicating the presence of fishes all over the pond. Sometimes they would swing around so quickly as to make quite a loud "chug;" and once in a while a nose would come up clear out of the water, and their brilliant shining scales would glisten in the sun.

The next morning I provided myself with some crackers, to see if they would eat, and pretty soon I was abundantly satisfied. Of course, you have to keep still, if you want to see them behave themselves as if they were at home. If you do not, or if they catch a sight of you, they disappear in a second, sometimes with a tremendous swash of the water. I did not know whether I could keep Huber still enough to get a sight of them, but he took it all in an instant. "Oh! oh! oh! Hungry as little bears, aren't they, papa?" No wonder he thought they were "hungry as little bears," for I should think all the large ones in the pond were after the broken crackers I had flung upon the surface of the water; and such a nosing as they made, to gather up the fragments! The only way a fish has for telling whether a thing is good, is to swallow it part way; and if it does not suit him, he blows it out with a stream of water. On one occasion a black stick a couple of inches long came shooting right up in the middle of the pond. Afterward came the nose of one of those large carp. He shot it out as being unsavory, but immediately sucked in the crackers, with great satisfaction. No doubt we shall soon have them perfectly tame.

Now, there is one other thing I have discovered about our carp-pond, and I wish that Prof. Cook, or somebody else, would enlighten me if possible. Early in spring I saw great quantities of what I took to be frog's eggs—a disagreeable scum floating on the pond, full of little round balls about the size of shot. I remember of thinking I would skim them all off, so as to avoid raising such an army of frogs; but it was neglected, and by and by we had little polliwogs—millions of them. They came up in the shallow water, where we had provided a place for the carp to breed, and the little wigglers made a black fringe all around the edge of the pond. They just lay in heaps in shallow water. Well, some of them grew into large polliwogs, perhaps two inches long; but the most of them did not get larger than a common cricket, some not larger than house-flies, before they turned into veritable hopping toads, and they covered the bank so they resembled a swarm of bees—little black toads the size of crickets, or smaller; and when I came down among them, instead of plunging back into the water they climbed over the bank of the pond and hopped off into the woods. Now, then, do tadpoles (we call them polliwogs) undergo transformation at all ages and sizes? There can not be as many different varieties as there are sizes, because they lose their tails and put on legs at every possible size from that of a house-fly up to two inches in length. Some of them seemed to turn into frogs, and some into toads, or tree-toads, any way; and the whole lot came from one batch of eggs, evidently. I had rather hoped the carp would turn in and gobble them up, so as to rid my

pond of their presence; but the carp seemed to very much prefer rooting around among the weeds and rubbish in the bottom and along the edges of the pond, not troubling themselves about any thing in the shape of animal life. Our carp seem to be vegetarians. No wonder they grow enormously during a single season. If you should see them around with their great mouths, taking in all sorts of trash, every or any day, the wonder would be if they did *not* grow.

A BUNDLE OF QUERIES FROM ONE OF OUR A B C SCHOLARS.

ARE QUEENS OFTEN SUPERSEDED BECAUSE THEIR WINGS ARE CLIPPED?

I AM very much pleased with Mrs. Culp's plan of managing an apiary. If we farmers can practice the same successfully, we can keep a few colonies without being compelled to stay within hailing distance of the house all through swarming time; but with me it has not proved successful with the Italians. Of course, I am only a beginner, and may have made a great many serious mistakes; for instance, last season I had one colony that would persist in building queen-cells; and when I put the sections on I could not examine them until I took them off in the fall, so I forgot all about queen-cells until one warm day in February, when the bees carried out the old queen and two young ones; then I looked, and found three empty cells and a young queen that proved to be unfertilized. I should like to know if bees often supersede their queen because her wing is clipped. Also, when there are two queens in one hive, does the younger generally kill the older, or the reverse? Why does Mr. Doolittle say, "Remove all the drone-comb from the hive, except an inch or so"? Why leave that inch? and why does he charge twice as much for a tested queen two years old as one only one year old? I thought queens lived only about three years.

What do you mean by the German, or brown bee? Are they the common black bee?

Is alsike clover a biennial or perennial? and does it propagate by runners, like the white, or from seed only? It is a new thing with us, the first being sown this spring.

Is alfalfa a good honey-plant? It does well here, but there is none within range of our bees.

Brock, Neb., June 8, 1885.

J. S. JOHNSTON.

We have sometimes thought that the bees objected to a clipped queen; and as a good many people have their own notions in regard to the matter, we have discontinued clipping queens.—My experience has been, that when there are two queens in a hive, mother and daughter, there is no killing at all. The old queen lives at home peaceably until she dies and is carried out.—Why leave a little drone-comb in the hive? Friend J., Mr. Doolittle recommends a little drone-comb, to satisfy the bees. If you cut it all out entirely, they will tear down worker-combs and work them over into drone.—Mr. Doolittle charges as he does for those two-year-old queens, because they have been tested for queen-rearing; and when you have one, you can go right to work and start a hundred queens if you wish, being pretty

sure that they will all be nice ones. It is a good deal of labor testing a queen for queen-rearing, and they ought to bring a good price, even if they are old.—The terms German bees, brown bees, black bees, and common bees, all mean one and the same thing. If we could agree on some one term it would be an excellent idea, but I do not know whether the friends would all agree as to what our native bees should be called.—I suppose alsike clover would be called a perennial; and although it may come up again for several seasons, it usually runs out mostly in three or four years.—Alfalfa is said to yield considerable honey in many localities in California. The bees seldom if ever work on it here.

CLIPPING QUEENS' WINGS.

SHALL WE HAVE THEM CLIPPED OR NOT CLIPPED?

IF I mistake not, I have seen somewhere in GLEANINGS, within a year, that friend Root did not clip the wings of his queens, and believed the practice to be a bad one. As far as friend Root is concerned, together with the way he runs his apiary, for the sole purpose of selling queens, and bees by the pound, perhaps such advice is all well enough; but when it comes to the majority of apiarists, especially those working for comb honey, where more or less natural swarming is sure to be done, I can not help but think the advice is not sound. Why I speak of the clipping of queens' wings at this time is that, had I not kept the wings of my queens clipped, I should have lost a valuable queen and colony of bees last Sabbath.

A few days ago I looked over all my strongest colonies of bees to see if any needed feeding, as we always have a honey-dearth here after the fruit-bloom is over and before white clover opens. In thus going over the yard I failed to find any preparations being made for swarming. It often happens that a colony which is well supplied with stores will prepare for and swarm during this honey-dearth, and for this reason I carefully examined all such, so that I might know if any watch of the apiary for swarms would be needed. As I found no signs of swarming, no watch was kept. Imagine my surprise, but two days later, just after we returned from church, to hear Mrs. D. call out, "The bees are swarming!"

Upon going to the apiary I found the bees rushing out of my best colony by the thousand. The queen was soon found, and placed in a wire-cloth cage, which was hung on the small twig of an apple-tree which the bees were beginning to cluster upon. I now went to the shop and got six frames of comb to put in a hive which stood in the apiary, and prepared the same for the reception of the swarm, when I went to the house for a moment while the bees were finishing clustering. As soon as I thought they were sufficiently clustered I started to hive them; but before I got where they were I saw that they were just commencing to uncluster, preparatory to leaving. I hurried to them; but before I had gone two rods they were on the wing, and in a moment more were taking a "bee-line" across the fields for the woods, at a rate which defied the ordinary speed of most people who run. After being gone for some time they found they had left the queen behind, when presently they came stringing

back, and began clustering on the same twig about the queen; and after clustering the second time, they were hived. Now, had not this queen been clipped I should certainly have lost a queen valued at \$10.00, and a good swarm of bees, which, if the season proves good, will produce me \$5.00 to \$10.00 worth of section honey. Supposing she had not been clipped, and they had come out an hour or more earlier (it was two o'clock when they swarmed), as swarms as a rule usually do, I should probably have concluded that the queen had been superseded when next I examined them, and been none the wiser regarding the swarm, unless I had inspected the colony before they had filled up with young bees. If they had come out a few hours earlier, as the queen was clipped she without doubt would have returned to the hive when the bees came back, and swarmed the next time when I was at home.

A good many seem to think it is troublesome to hive swarms where the queen is clipped; but with me I can do it full more easily than I can when the queen goes with the swarm. But, suppose it were, as some think, could I not well afford to be at considerable trouble for the \$15.00 or \$20.00 I have saved in this case?

The complete control you have of an apiary where all the queens have clipped wings, gives a man a certain confidence which is worth far more to me than all the trouble which might occur to a novice would amount to. Another thing: Should the bees sometimes bother by mixing up or entering wrong hives, etc., there is always a comforting thought about it, which is, the bees are always in the apiary, where they will be bringing in the honey just as well as if they were exactly where you at first desired. With Prof. Cook, Dr. C. C. Miller, and others, I advise all working for comb honey to clip the queens' wings. 16—G. M. DOOLITTLE, 80—40.

Borodino, O. N. Y.

No doubt if I were raising comb honey, friend D. I would have my queens clipped; but I believe there are quite a number of comb-honey raisers who decide they do not want any more clipped queens. The objections are, first, that a good many facts seem to indicate that bees sometimes displace a queen after a wing has been clipped, or at least attempt to displace her. I am inclined to think this is a mistake; but as a good many seem to have got the notion into their heads, we have been obliged to stop clipping ours, when sending them out for sale. Quite a number of our customers have declared that they will not have a clipped queen at any price. Second, if I am not mistaken a queen is often lost where she is clipped, where she would not have been lost if she had had the use of her wings. Suppose the swarm had come out while you were at church, are you sure a clipped queen would have got back into the hive? or what does happen usually when a swarm comes out with a clipped queen, when no one is around? I have several times followed them quite a piece across the apiary where they had hopped along. I found them by the few bees that were buzzing along the track they had taken; but I have reason to think that a good many were lost in that way when they were never found. You may say that we had better lose the queen only, than to lose the queen, bees, and

all; and I do not know of any way of managing bees without a liability of such losses, unless somebody is on hand to look after swarms as they issue. Our perforated zinc and drone-traps ought to fix the business; but somehow we do not get many definite reports as to how these fixtures do work. How is it, friends? Shall we clip our queens where we are working for oomb honey, or shall we let them go unclipped? We should like to hear from a good many in regard to this matter.

A LETTER FROM ONE OF THE RECLAIMED.

YES, MY FRIENDS, AND FROM ONE WHO HAS BEEN RECLAIMED BY THE GRACE OF GOD.

FRIEND AMOS:—After using and abusing tobacco for forty years or more, I have quit. I use it in no form whatever. I quit the habit at once, which threw me into a high fever. My pulse was 120 per minute, and I was so roasted with this fever, and at times had such an all-gone, idiotic feeling, that I took to it again. In a few hours the fever was gone, and I felt right in *body*, but not in mind, for I was *whipped*. In a few months I reinforced and made another "bulge" on old *flesh* and *Satan*, but I was not successful; that tormenting fever rose again; my pulse beat 115 per minute, and again I poured nicotine on the troubled waters, and there was a calm. My friends told me I was too old to quit, and that I was foolish for punishing myself in this way; that I could *not* quit. I told them I had better die trying than to continue to live in sin, feeling as I did that the use of that poisonous, stimulating drug was a barrier that prevented the full flow of the love of our heavenly Father into my poor thirsty soul. After being defeated in this way, and having to surrender unconditionally, I concluded to dig a trench around the city, lay siege, and starve my enemy into submission, concluding that, as my system by degrees accommodated itself to the use of tobacco, in a like manner it could be trained to the disuse of it. So I made or commenced the third attack on *flesh* and *Satan* by using none before breakfast; but, oh what a fuss, dust, and outcry was raised over this innovation on the habit of forty years' standing, by the old totally depraved humanity and *Satan*! But the Lord helped, and continued to encamp on the battle-field, and this victory was followed up by using less and still less every day. As Mr. Bunyan says, I put a guard at mouth-gate and feel-gate, and then reinforced every morning by asking God to help me to quit, if it was his will I should quit, and in this way I tapered off until I used none at all.

Everybody engaged in this fight should be very watchful, or the "tapered" end will be the larger. By the help of God I am now a free man; and as the odor of pipe and tobacco is not pleasant, I suppose my appetite, taste, feeling, etc., are getting back into the natural channel again, and I have the use of my mind and body both, better now than when I used that stimulating, sickening, poisonous, narcotic, filthy drug—no, no; not filthy *drug*, but filthy *habit*, and my appetite is not ravenous and changeable as it was, and sleep comes when I call for it.

But the trophy of great value that I brought off from this battle-field is a calm, serene, sweet frame of mind that I never felt before, and I have a near-

er approach to my heavenly Father, and I am now nestling in his love. For many years back, my conscience has been ill at ease with regard to the use of this so-called "creature comfort." The following reflections gave me smarting, biting convictions:

"Will you not thank God for that quid of tobacco?"

"No."

"Why?"

"Because it is a deadly poison, containing no nourishment; it injures the digestion and nerves, and hurts my eyes, so I can not thank him for it and be honest and sincere."

Red-hot wires were then drawn across my conscience in this shape:

"If you can not thank God for the weed to use as a diet, quit it; for you are commanded to use nothing but what you can use in the name of the Lord Jesus; and, again, in every thing give thanks; and, furthermore, by your own confession you are guilty, or will be guilty of self-murder, being broiled and scalded in this way."

I squirmed and fought and ran and fell; but God helped me up on my feet again, and, "by grace I am what I am," a free man. The storm is behind me, and I am camping on the battle-field, awaiting orders from the Captain of my salvation to go and report at headquarters, and receive my promised inheritance.

And now in conclusion, let me tell you that I do not write this to you in order to get a smoker; no, no. I am using the one that I bought of you. When I received it, one screw was loose. I tightened it, but it came loose again, and was lost; but the smoker is doing good work, though it is traveling on three legs. I have written the foregoing, hoping that you will dress it over so it will be fit to be seen, because I have neither brains nor education; but if all or any part of it will help one man or woman to become free, who is now a slave, I shall be well paid.

J. M. STEEDMAN.

Quitman, Texas, May 3, 1885.

Friend S., I thank you for your little story, as it teaches me a lesson. Some of the friends here in the establishment insisted that they could break off better to take it a little bit gradually, than to cut loose all of a sudden. I objected to this way of doing, and I do yet. It seems to me dangerous to dally with sin; and yet the fact that you conquered in that way makes me feel that I ought to be careful about dictating a course for others. God saves, and he seems to have peculiar methods of saving different individuals. But he *does* save; and may all honor and glory and praise be to his holy name!

FUNGUS SPORES FOR BEE-BREAD.

A NEW KIND OF POLLEN.

YOU know, Mr. Editor, that what is one person's meat is another person's poison. That is literally proved in a case reported to me by one of our graduates, O. L. Hershiser, of Water Valley, N. Y. He sends me a twig of wild blackberry, which is badly attacked by the blackberry or raspberry fungus. The leaves are thickly coated with this yellow fungoid growth, which I believe, according to our best fungologists, is a very hurtful enemy to the plants. Mr. Hershiser states that the bees are thronging these plants where

"they gather this fungus with great apparent greed." Mr. H. asks if there is any danger from its becoming a substitute for pollen. I answer him, that I should have no fears. When Dr. Beal and I have been examining the ingesta of bees we have more than once noticed spore-like bodies in the intestines of the bees. Here we have positive proof that bees come by such spores legitimately. Bees appreciate a good thing when they see it, and care little where they get their albuminous food, whether from the anthers of flowers, the spore-cases of fungi, or the meal-bag. Every good wholesome albuminoid is appropriated with equal eagerness, if in a dust-like form suitable for transportation, according to the rules and requirements of bee-commerce. We see, then, that the old maxim is sustained; for this fungus, while it drinks up the life of the plants, yields up life-giving food to the bees. Bee-bread—plant-poison.

Prof. L. H. Bailey informs me that the scientific name of the orange-rust of the blackberry and raspberry is *Croema luminatum*. A. J. COOK.

Agricultural College, Mich., June, 1885.

This matter has been mentioned before, friend C., if I am not mistaken, in some of our bee-journals. The bees store the substance just as they do pollen, and it increases brood-rearing enormously. I never heard of its doing any hurt in the bee-hives, for the bees understand their business of preserving food a little better, if any thing, than the managers of refrigerator cars, and other like institutions. Some years ago I mentioned bees making some use of a quantity of mites that they found on the shelves of a cheese-factory. Under the microscope the dust was a mass of wriggling insects; but the bees packed them on their legs, and carried them home all the same.

FALSE STATEMENTS IN REGARD TO THE HONEY BUSINESS OF OUR COUNTRY.

As a protection to our bee-keeping population, we propose in this department to publish the names of newspapers that persist in publishing false statements in regard to the purity of honey which we as bee-keepers put on the market. When any paper will correct the matter publicly, with suitable apology, the name will be dropped. A copy of this article will be mailed to the editor of any paper giving place to such statements, with a written protest, before the name of the paper is given. After the lapse of a suitable time, if the matter is not corrected we will keep a standing notice, to warn the people at large that said paper does not scruple to give publicity to this class of falsehoods.

MORE ABOUT THE SOUR APPLE-PARINGS.

HERE is an article clipped from our county paper. I don't put any confidence in it, but it hurts our business to have the honey-consumers think they are buying glucose or some other poor stuff. I wrote the editor a line on it. What do you think of it?

A. W. LINDSEY.

West Brooklyn, Pa., June 8, 1885.

SECRETS OF THE TRADE.

Well may it be said, that as we live we learn. The discussion of the canned-goods subject has brought out some curious secrets of the trade. For example, it is learned that the "canners" sell the cores and parings of apples to the makers of so-called jellies, who, by the aid of different essences, turn out substances which are beautifully labeled as popular gelatinous products. When the parings, etc., become too decomposed to be used for jellies, they are sold to the manufacturers of "strained honey"; and it is asserted that none of the stuff so designated found in the market contains any honey whatever.

We never know what blessings are in store for us, and doubtless before long we will hear more of the benefits to be derived from cheap food.

That is the talk, friend L. Just send along all such notices. But, please give the name of your county paper; also please show the editor the article on page 410, in last month's issue, and ask him if he won't be so good, as to correct the tendency of his little item, headed "Secrets of the Trade." His comments seem to be in a sort of a strain of pleasantry, as if he had no faith in such stories; but after all, such items are harmful, and in all probability he does not want to harm anybody, even by implication.

Please find part of newspaper on adulteration of honey, as you request in GLEANINGS.

Harpersville, N. Y.

GEORGE RICHARDS.

ADULTERATION OF FOOD; THE EXTENT TO WHICH IT IS PRACTICED BROUGHT TO THE GOVERNOR'S ATTENTION.

Albany correspondent N. Y. Tribune.

"I have been astonished lately at the extent of the adulteration of food," said Governor Hill, glancing over the canned-goods bill a few days ago. "It would seem," he continued, "that every thing we eat is adulterated. In hearing testimony about this canned-goods bill, for instance, all kinds of imposture and deceit of customers were brought to my attention. This adulteration of groceries is becoming a national evil; one that we shall have to adopt severe measures to check. France is an elysium for those who desire to buy pure articles when they go to the grocery. The French government have taken extraordinary steps to protect the people—steps that perhaps could not be taken in this country, but the object has been accomplished. When you buy pepper in France, you know you are getting pepper, and not some weak adulteration of it; and so it is with all other articles.

"One of the measures of the French government to check adulteration which have proved successful, is a law which compels every grocer, when convicted of the crime, to place a large placard in his store-window, and keep it there for a year, with the words inscribed upon it, 'Convicted of adulteration.' Some curious facts were revealed by the packers of canned goods in private conversation. 'You would not think the parings and cores of apples of any use, would you?' said one of the packers to a friend.

"He then continued: 'Well, a fruit-packing establishment makes use of every thing; like the pork-packing factories, which save every thing except the pig's grunt. When we are packing and drying apples we have tons and tons of parings and cores. These we sell to the makers of jelly. All kinds of jellies are made of the material. You can not buy real currant jelly in the groceries. Every bit of it is apple, with some essence in it. But that is not the sole use of apple-parings. Occasionally we keep them so long that they can not be converted into jelly. Then we sell them to the makers of strained honey. All the strained honey that you see in the market is made of it—there isn't a bit of honey about it.'—Democratic Leader, Binghamton, N. Y.

Thank you, friend R. There is one good thing in the clipping you send us, and that is, about making grocers keep a placard in their windows. In our country, the grocer might as well put up his shutters and stop business as to do that. Following out the same thought, why would it not be an excellent idea to compel newspapers to keep a placard in large type, in a prominent place in their columns? Suppose we have a placard reading something like this:

"CONVICTED OF PUBLISHING SLANDEROUS STATEMENTS."

The above communication, some way or other, seems to mix up the Governor's name with this sour-apple-skin fraud. Now, Mr.

Democratic Leader, we call upon you to correct the impression you have publicly given, that all the strained honey seen in the market is made of sour apple-cores and parings. Come to think about it, it was only a year ago that these same papers informed us that all the jelly used in the United States was made entirely of old boots and shoes. What jelly will be made of in 1886 remains to be seen.

BEEES BY THE POUND.

BY request of friend W. Z. Hutchinson we copy the following from the *Country Gentleman* of June 11, 1885:

Eds. Country Gentleman—You will, perhaps, remember that the writer mentioned, in a recent article, that those who had lost their bees might find it advisable to buy bees by the pound. He followed the advice that he gave others, and has lately received from Tennessee thirty-two packages, each containing a queen and nearly three pounds of bees. It may be of interest to bee-keepers to know in what way they were put up for shipment, and how they were treated on arrival.

The shipping cages, or boxes, were 7½ inches deep, 11 inches wide, and 15½ inches long. The sides were of half-inch lumber, and the ends of stuff not more than three-sixteenths of an inch in thickness. Quite a point is made of making the cages as light as possible, in order to save express charges. The tops and bottoms of the cages are of wire cloth. The food for the bees to eat while on their journey is prepared by mixing powdered sugar with honey to the consistency of a stiff dough. At one end of each cage, upon the inside, is a slanting shelf, or rather trough, formed by placing the lower edge of a thin piece of board, 3 inches wide and as long as inside width of the cage, against the end-board of the cage. This piece of board projects inwardly and upwardly, from the end of the cage, forming an angle of 45°, it being held in place by cleats nailed to the sides of the cage, the ends of the board resting upon the cleats. It is in the trough formed by this board and the end of the cage that the food is placed. When every thing is in readiness, the cage is, of course, weighed, and then bees shaken from the combs into it, until it contains the requisite amount. In order to be certain that the queen is in the cage, it might be well to cage her until the bees are all in, then put her in with them and close up the cage at once. When the cages are all filled with bees, two of the cages are placed side by side, and strips of thin board tacked across their ends, thus fastening them together and virtually making one package of two cages. Neither does the matter stop here, for one of these double cages is placed four inches above another double cage, and the two fastened together by upright pieces of lath nailed on at the corners and sides. The lower ends of the lath project four inches below the lower double cage, thus forming legs to support the cages and keep them off the floor. Fastened to the upright center side-pieces of lath, was a light rope that passed over the top of the cages, thus forming a handle to lift and carry them by. Upon the top of each "nest" of cages was the consignee's name and address, a business card stating where they were from, and a placard which read as follows: "Living bees; keep this side up. Please handle with care, and keep out of the sun. Please sprinkle with a little water daily, at noon." The bees were three days in transit, and arrived in the best possible condition; in no cage were there more than 50 dead bees, and in some of them the bees had built comb, liquefied some of their food and stored it in the comb; and in two instances, the queen had laid in the comb!

It was evening when the bees arrived, and they were sprinkled with water, and left undisturbed until morning, when each swarm was found quietly clustered in the top of its cage. The cages were so carefully separated that the clusters of bees remained unbroken. A hive for each cage of bees had been previously prepared by filling it with clean, dry combs; each outside comb, however, contained a little honey. The wire cloth was carefully

removed from the bottom of a cage, the cover removed from a hive, and the cage set down upon the frames. The cage did not of course cover the entire top of the hive, and little pieces of boards and strips of cloth were laid around the cage until the top of the hive was covered. If any little cracks or holes were left, they were stopped with damp earth. The object of all these precautions in completely covering the top of the hive was, that the bees might be compelled to pass down through the hive and take their first flight from its entrance, for the reason that, after its first flight in a new locality, a bee will return to the exact spot from whence it flew; if it flew from the top of the hive, it will insist upon going in at the top, and if it can not get in at the top, it is some little time before it finds and uses the lower entrance. When every thing was in readiness, the hand was brought down with a "spat" upon the wire-cloth covering of the cage, which dislodged the bees and sent them down upon the combs. A cover was then laid over the top of the cage, that the bees might see no light except at the entrance of the hive. They flew from the entrance right merrily. In some instances a comb of brood was placed in the center of the hive before putting the bees in; and when it is possible to do so, this plan is advisable; in fact, if there were strong colonies in the apiary that could spare the brood, it would be well to give three pounds of bees as many as four combs of brood, as the bees can easily care for it. The express charges were \$14.

W. Z. HUTCHINSON.

It seems from the above that the cages used for these 3 lbs. of bees were nearly as large as the one-story hive. It has been our custom, when so many as 3 lbs. were wanted with a single queen, to put them into a Simplicity hive, with a couple of combs (wired, of course), containing the stores for their use in transit. Of course, a cage made expressly would be lighter; but when the purchaser gets it, it is of no value to him.

THE SOLAR WAX-EXTRACTOR, AGAIN.

FRIEND COON TELLS US HOW TO USE IT.

I SEE by what you say about the sun extractor that it don't seem to be a success out there, on account of the sun not being hot enough. Well, the way I make them I can melt out wax or honey, candied in the comb, with the thermometer anywhere above 60, and strain the honey and wax all at the same time. I make a box 4 or 5 feet long by 10 inches wide on the bottom, and 20 wide on top; then for the top part I make a frame the same size as top of box, 3 or 4 inches deep, with saw-cuts run on the inside ½ or ¾ of an inch apart, 3 of them, so that I can use 1, 2, or 3 thicknesses of glass, according to the heat of the sun, by sliding glass 12x20 into the saw-cuts. The box is lined with tin, then part way between the glass and the bottom I place a frame with wire cloth; on top of that I put strainer cloth; on that my comb-scrapers of honey, candied honey in the comb, or any comb honey not salable in the comb, and get pure clean honey below, and the clean wax on top of the honey, and have a faucet in the bottom to draw off the honey. I think a machine of that kind will work well anywhere east, or wherever the sun shines at all in the summer, and it saves lots of work; for all you have to do when you have any waste honey or comb is to put it in under the glass. All is tight, and you can draw off your honey whenever you have a mind to. Mine will hold about 200 lbs. of honey before I have to draw it off.

LeMoore, Cal., June 6, 1885.

O. E. COON.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

WHAT TO DO WITH THE COVER OF A HIVE WHILE THE HIVE IS OPEN.

IN GLEANINGS for April 1, page 233, I find an article from Dr. C. C. Miller, on the trouble of removing heavy covers, when feeding; so I will tell you how I do it. My covers are made of $\frac{3}{4}$ stuff, 8 inches deep; the top is of one piece. They rest on a ledge $1\frac{1}{4}$ wide, $\frac{1}{2}$ inch from the top of the hive. Put a small nail or screw near the middle of the lower edge of the cap, and another below it in the ledge. Attach a twine to each nail, just long enough to hold the cover in place when it is raised, like an open trunk, and the work is done. If your ledge is not wide enough for the top to rest on, a couple of nails will answer. Now with the coffee-boiler of feed in one hand, raise the cover with the other, put in the feed, and close it, and the work is done without lifting the cap off. No covers to blow off; no hinges nor hooks, no springs nor clamps, but two small nails and two feet of twine, which can be attached to the screw-head by a little loop, so it can be easily taken off.

J. L. WOLCOTT.

Bloomington, Ill., April 23, 1885.

In the above arrangement the string is made of such a length as to permit the cover to tip over back, just far enough to stand safely, or, as our friend says, like the lid of a trunk. One objection I should have to it is, that the string would be right in the way for manipulations of many kinds. A string at each end of the cover, exactly as covers to trunks are fixed, would obviate this, but it would be more complicated. For many years, hive-covers have been made so as to open in this way, or similar ways. When we first made the Simplicity hives, the covers were hinged on. As it afterward became evident that many times the covers were an inconvenience when thus hinged, we made a hinge so they would slip off. Then it became necessary to have the attachment so made that any cover could be quickly attached to any hive. But this was found to be a matter so difficult to manage that hinges were abandoned entirely. Where a stake is put on the south side of a hive on which to train a grapevine, the cover may be tilted back against this stake, and I like this plan better than strings. Some apiarists while examining a hive use the cover for a seat, standing it on end. Others lean the cover against the hive. I believe that, as a rule, though, most of our friends find any sort of a string or wire or similar attachment rather a hindrance than an aid.

INVESTING \$200 IN A CARP-POND, ETC.

I have just received GLEANINGS for this date; and if I were in a joking mood, I should feel like joking you concerning your carp items. Right here I wish to thank you for the explanation concerning the annoying delay. What I would joke you about are the strange sentiments expressed in the reply to Mr. Best, though I think you intended to have the same apply to his particular case. Of course, there could be no need of his spending \$200 on a carp-pond 70 feet square, probably not $\frac{1}{4}$ of that sum. You make a very wild remark, however,

when you say you would not advise "anybody" to make a pond, etc. Again, you speak of receiving a specimen of *German* carp. The A B C will inform your readers that the only *German* carp in this country are the very few in the Government ponds at Washington. Your carp are no more *German* than I am a Frenchman, simply because I have traced my lineage to France. You make a grave mistake by feeding your carp, if you have a supply of water-plants in your pond.

MILTON P. PIERCE.

Philadelphia, Pa., June 1, 1885.

Friend P., what I meant by not advising anybody to make a carp-pond just now, with the idea of making money by it, was, that I hated to see young friends just starting in life, perhaps in cramped circumstances, going into these new industries with the idea of getting their money back in a short space of time. Of course, where carp is sold to stock other ponds, a very profitable business may be done; but what I had in view was the idea of putting carp on our markets for food. I would not advise anybody to go into it unless the party had money to spare so that he would be well able to stand a failure, and I would say the same in regard to many other industries—even bee culture. If your means are limited, do not invest very heavily to start with.—In regard to the carp we have, they call them *German* carp at the State hatchery, and I think they are real pretty, no matter what you call them.

CANDIED HONEY IN THE COMBS.

A neighbor of mine lost 43 out of 45 stocks of bees in American hives. There is 500 or 600 lbs. of honey, I judge, in the frames. He has the hives cleaned out, all dead bees brushed away, and empty combs cut away. I think the honey will not taste of any thing confined in the hives. I examined some to-day, and found some combs with the honey *candied*, especially those a little aged. Now he wants me to extract or get the honey out in salable shape, offering me one-half the honey for my trouble. I simply want to know my best plan to accomplish it and get it in marketable shape. Can the thick and candied honey be thinned to extract?

Nevada, Ohio, June 11, 1885.

WM. M. YOUNG.

It is a pretty hard matter to get candied honey out of combs. If it is not warm enough so the extractor will throw it out during some of our hottest summer days, I do not know how you can arrange it. If it was in your sized frames, I recommend it to rear brood. I am afraid the honey will not have a very good flavor any way you can manage it. See next page.

CALIFORNIA AT THE PRESENT DATE.

The meeting of the Central California Bee-Keepers' association came off in due course at Hanford, as advertised in GLEANINGS; but the beesmen all had long faces till after dinner, when they looked better. Bees are in a state of semi-starvation, getting barely enough to live on—the first time such a state of affairs has been known here. The reason is, no flowers. The grasshoppers are taking all the alfalfa bloom before it comes out; and our only chance for natural supplies for next winter seems to be what may come after the hoppers have died. There is good hope yet. My bees have gone from

42 to 50, but some of the new swarms have required a little help.

Mr. Wheeler showed his section-closing machine, which can easily be made to fit any section. It seemed to work very well, closing the section with one lever and throwing it out with another; simple and effectual.

Mr. Decker brought to the notice of the meeting a disease among his banded bees, not affecting the blacks. They become black and shiny, like old robbers, and the strong bees having nothing else to do seem to be wholly occupied in dragging out and finishing the sick ones. None of our bee-men can tell what it is. Can you enlighten us on the subject? [See A B C book, "Diseases of Bees."—ED.]

I notice that on pages 392 and 393 of last GLEANINGS Mr. J. P. Israel thinks he has the largest yield on record for his bees. If he refer to GLEANINGS for Nov. 15, 1883, page 712, he will find my report of 777½ lbs. per stand, spring count, and no account made of at least 50 lbs. to each hive in lower box, which I never interfered with; that over 20 hives to which the four had increased, I sold 2 and had 18 for 1884, which increased to 42, and gave only 3600 lbs., which I did not think worth reporting, so perhaps my bees are ahead of his for the blue ribbon he speaks of. GEORGE HOBLER.

Hanford, Cal., June 9, 1885.

GETTING POOR CANDIED HONEY OUT OF OLD COMBS.

Bees are doing finely; have commenced on alsike and white clover, and honey is coming in fast. My hives are all full of bees again, and I am selling queens and nuclei. All the black bees are gone—none but pure bees for miles around. Those wishing to get poor honey out from the combs can do so by uncapping and soaking the combs in water twenty-four hours, and then throw out with extractor. Mine will not come out without the soaking.

M. H. HUNT.

Bell Branch, Mich., June 15, 1885.

Friend Hunt, we are glad to know that your hives are filled up again, and that the bees are once more booming. Thank you for your suggestion in regard to getting out candied honey. I thought I was up to almost all such "tricks of the trade," but I must confess you were ahead of me there.

EXTRACTING DOES IT INJURE THE EGGS?

Last week I did my first extracting, something never seen before in this section. In two hives I found some frames in the upper tier that had about two-thirds of the cells with eggs in them. I extracted the honey from those frames, and replaced them in the hives, intending in a few days to use them for the brood-frames in dividing a very strong colony that showed indications of swarming. Imagine my surprise this morning, on examination to find that the bees are again filling the upper third of the cells, while the lower two-thirds still contain those same eggs, *unhatched* that they did six days ago; and there is no indication that they are going to store honey in those cells that contain the eggs. Those frames were out of their hive about thirty minutes. Do you think that keeping them out that long was the cause of their not hatching? Or is it possible that they may have become chilled some cool night, by the bees all leaving the upper story and clustering in the brood-nest? I find nothing of the kind mentioned in my A B C. Will not the bees

appropriate those cells containing the *dead* eggs this season at all? One thing more: In every one of the frames from which I extracted the honey, there was a single row of cells near one end, extending from top to bottom, out of which the honey would not come. It did look strange to see this single row of cells appear in every frame, while every other cell in the frame would be empty. It is something that I could not account for, any more than the dormant eggs already mentioned.

I want to ask you if cockroaches are an enemy to bees. I scarcely ever lift the cover off from a hive but that I see three or four of them hustling around on the enamel sheet, sometimes dropping down among the bees, without, however, causing any perceptible disturbance. L. HALL.

Sparta, Miss., May 26, 1885.

Friend H., I do not think the extracting had any thing to do with the eggs mentioned. Keeping eggs out of a hive half a day will not injure them at all, unless the weather is quite cool—much cooler than it probably was when you did the extracting.—The row of cells you speak of, from which the honey would not come, I presume came opposite one of the tin bars on the extractor-frame.—We do not have any cockroaches here, but they have been several times mentioned. If I am correct, they do no particular harm.

BEES THAT WORK ON RED CLOVER, AND BEES THAT WON'T DIE WINTERING.

Bees are doing nicely at this time—plenty of clover-bloom. I was out in the fields to-day, and saw them on all kinds of clover—alsike, white, and common red clover. Our bees work on the red clover from this time until frost, and many of them are only hybrids. I can not but smile when I see red-clover bees advertised as wintering without loss, since that class was originated, etc. Now, we have had them for over five years, and they die like other bees—sting us hard and as often as any.

We had a large swarm that came out and went directly to a hollow tree, without clustering; it was about a mile away. Fully three-fourths of the bees in this county died last winter. We left ours on summer stands without any protection, in single-walled hives, and lost over half.

LEE JOB.

Fillmore, Ind., June 15, 1885.

WHAT AILS THE BEES?

The bees in this part of the country wintered well—with the loss of hardly a single colony—if they had any protection. But since they commenced work this spring there has been a great fatality among them. At first we thought it was spring dwindling, but now we are half of the opinion that it must be poison of some kind. When the bee is first taken it rushes out, runs tumbling and rolling over the ground as if in great pain or trouble. After a minute or so it will settle down, commence rubbing its head with its fore-legs, then run out its tongue and wipe it off with its fore-legs, and then it will rub its hind-legs together, and so it will continue going, just from one of those motions to the other for a period of an hour or so, growing weaker and weaker, when it will die. Occasionally one will throw off its feces, fly away, and seem all right; but others do not. Their feces smell like sour honey. After the bee is dead its tongue is extruded, and the body drawn up rather than otherwise. In

your A B C book you mention that bees may be poisoned, but you do not state how they are affected. If you can tell us the cause of the trouble, or the remedy, if any, it may enable us to avoid more loss such as has already occurred. In some instances three swarms have been put into one; and in many, all of the bees have died.

C. D. WRIGHT.

Durango, Col., June 10, 1885.

Friend W., your bees are evidently poisoned by something they have gathered, or by some disease affecting them. Some of the symptoms you mention are strikingly like those of the nameless disease I have mentioned in the A B C book. I should try to find out what they are working on, to see, if possible, whether they have been gathering any thing that will account for it; also ascertain over how large a tract of country this malady extends. This may give you some clew to it.

THE WAY AN A B C SCHOLAR TRANSFERRED HIS BEES.

I will tell how I did it. I took a large piece of mosquito-bar, put it over a large hat, made arm-holes in it, tied it around my waist, put pants in top of boots, put on a pair of rubber gloves, and went to work. I pried off the side of a box hive. I had a good smoker, but didn't use it. I cut out the combs, and a friend of mine tied them in the frames. I think there was nearly 60 lbs. of honey in it, and somewhere near that of bees. There wasn't room to put your hands in for bees. My father said they would go to the woods next day, but they didn't. It took an hour and a half to do it. I filled seven frames of brood and honey, and there wasn't any room for more bees. These were transferred June 6, 1885. I looked at them Tuesday, the 9th, and cut off the strings; and they were doing finely. So much for a beginner.

Lockport, N. Y.

MYRON BAILEY.

Very well done, friend Myron; but if you did not use the smoker, you might have laid aside that big mosquito-bar veil also. The reason why you had so much honey and bees in the way was because you waited until June. If the operation had been performed in the time of fruit-bloom, as usually recommended, there would have been fewer bees and also less honey. However, you did pretty well as it was.

KEEPING BEES ON AN ISLAND; SOME SUGGESTIONS ABOUT WINTERING.

I am on an island of 600 acres and of course I have tried the bees here, and here is my experience, as short as I can give it. I came here in June, 1882; bought eleven full colonies; no surplus honey, no natural swarms; but fall found them in good shape to winter, and I did winter them without any loss—ten in Simplicity in cellar, one in chaff hive on summer stand (I Italianized all that year, 1882). June, 1883, found them in very good shape, ready for work. This year they made about 50 lbs. of surplus honey from five colonies; the other six I used for raising queens and dividing, selling some \$12 or \$15 worth. We had no fall flow of honey, and October found them almost destitute of stores, so I fed them up nicely until perfectly safe on this score, with sugar syrup, and placed them in cellar, nicely packed and ventilated (same number—11 colonies), Nov. 20, 1883. Now comes the point, and pride takes a fall. They all died but one, and that one was next to the

cellar-door; 8 died in March, 2 in April, and they died with their tongues right on the feed, and looking the same as in life, when standing sipping honey from a feeder—no disease of any kind that I could detect.

Now, what was the matter? Well, I am going to suggest, and see if you agree with me. I think the air was poisonous. I have now but two colonies. I shall try them on summer stands. I feel quite sure that I can not do much raising honey here, but I can raise queens, and good ones too, and have them purely mated. I am half a mile from "Maine" land; and I have noticed a great many times when I have been rowing across from the main land to the island when the wind was quite strong against the bees, they would fly heavily laden abreast of my boat, dropping lower and lower, until coming to the water, never to rise, so I feel that I lost thousands in this way.

L. S. SMITH.

West Gouldsboro, Me., Nov. 24, 1881.

Friend S., I should think, from what you say, that an island is not a very desirable place for keeping bees. In fact, there are times when a good many of them must be lost by falling into the water.—In regard to wintering, the fact that the one by the cellar-door lived, and the rest all died, seems to indicate, as you say, bad air, or not enough ventilation. Perhaps if you had a ventilator that would keep changing the air of the cellar, they would all have done as well as that one by the door.

HONEY-THIEVES.

I, like A. J. Kimmons, of Round Rock, Texas, am no specialist, although I take the greatest pleasure with my bees of any of the rest of my employments; i. e., general farming, and stock raising. In consequence of our excessive drought our bees scarcely made their own supplies. Last spring count, 44; increased to 74, and doubled back to 62, present number. I sold barely honey enough to buy a barrel of sugar, which I fed to the weak colonies.

A word now about thieves. I see by reading last GLEANINGS, that other localities are tormented by thieves as well as my own. I beg pardon; but while I should not like to kill a man (even a thief for stealing honey or any thing else), I still feel to demur from your only idea of education or evangelization; for we have a few (I am glad there are no more), that, according to Bible testimony, are "fools." They say in their hearts, "There is no God." Their only restraint is the fear of the law.

The two imported queens I got of you did good service; but the first one does much the better, and raises the best queens and bees. I shall want another in the spring.

ELIAS COLE.

Ashley, Ohio, Dec. 6, 1884.

Friend C., I think you misunderstood me. I would by no means do away with the law. I have never dreamed of advocating such a course. Send thieves to jail, by all means, as fast as we can get hold of them; but at the same time, do all in our power to prevent the necessity of law and jails, by education and evangelization. Almost every Sunday I meet with criminals in our county jail. I am sorry for the necessity of their being there; but yet I thank God every time I see one there, that we have been able to get hold of him and stop him in his folly. Only

yesterday afternoon at about this hour I was talking with a boy of eighteen years of age, who had been imprisoned a week under a charge of horse-stealing. The open saloon was at the bottom of it, as usual; and while I lamented that we could not have the saloon-keeper as well as the boy, I told him he ought to thank God for having thus brought him to a standstill in his folly. While intoxicated he took a horse he found by the side of the road—rode off six or eight miles, and traded it for another horse, getting \$35.00 to boot. The amount was just sufficient to send him to the penitentiary, for obtaining money under false pretenses, aside from the penitentiary crime of horse-stealing. He said he took the horse while under the influence of liquor; but after that influence wore off, he was afraid to take it back to the owner and ask his forgiveness; so he foolishly traded it off, and got arrested almost immediately. He was only eighteen years old, and the punishment seems terrible for the work of only a few hours. But this kind of horse-stealing has got to be so common that it would be dangerous if not wicked to let him go unpunished. We lament that we dare not take the risks of letting him off short of State's prison. But at the same time, the thought of that open saloon, all ready to send more boys after this one, should rouse every God-fearing man and woman to action.—It is often the case with queens as you state, friend C. In fact, we rarely find two of equal value in every respect.

A LITHOGRAPHIC LABEL THAT DOES NOT COST SO MUCH; ALSO SOMETHING IN REGARD TO LABELS AND CANS FOR EXTRACTED HONEY.

I struck a label last summer that is so handsome that I mail you one. It is the handsomest label suitable for honey that I have ever seen. I have not seen your extensive line of labels, and perhaps you may have some that surpass it. I obtained them from Gunn, Curtis & Co., color printers, 30 Hawley St., Boston, Mass. I bought 1000 for \$4.25, which seems to me to be very reasonable indeed. They are made to exactly cover a 1-qt. tin can, the same as the common tin fruit-cans. I put up honey in that shape, and retail cans at 50 cents each. I can buy the cans at a canning-factory at 3½ cts. each. After being soldered it makes the best package to sell to country customers that I know of. By cutting the label in two in the middle it makes a very fine one for 1 or 2 qt. cans, such as Mason's, or for pails or packages of any kind. A fine label will almost of itself sell any merchandise. I have taken much satisfaction in putting up honey in this neat way. If any of the bee-keeping friends would like to see one of the labels I will mail them one on receipt of a two-cent stamp.

As there has been a good deal of "spouting" lately as to how GLEANINGS should and should not be conducted, allow me to say that you furnish a good dollar's worth of "exclusive" bee business, and it is your privilege to give good measure and running over of that great spice of life—variety—if you desire to do so. JOHN F. WHITMORE.

Anita, Iowa, June 18, 1885.

Thanks for the sample you send us, friend W., and also for the offer to send one to beekeepers. The label is similar to the one we

sold largely before we got the Jones labels. I will explain to our readers that it is a beautifully colored lithographic label, made with proper blanks to be filled out so it will be suitable for either honey, syrup, or any other purpose; that is, the pictures on the labels have no direct reference to bee-keeping or any other special industry. The sample in question is filled out, evidently, at the label-factory; that is, the printing is put on before the varnish is put over the colors. This makes a very attractive label, and yet one that can not be soiled by honey or any thing else, for it can be washed off like oil cloth. A Jones label of similar size, printed to order, will cost \$6.50 per 1000. I suppose, from what you say, friend W., that you get these ready printed to order of the firm named, for only \$4.25 for a single thousand. If this is so, bee-keepers might afford to give them considerable trade. The prices you mention on tin cans are also low, our prices being for a one-quart can, \$3.75. I guess we shall have to make ours \$3.50, since you have told us we are above the market.

ANTS—A CAUTION.

I received the queen that you sent, in good order, and I was well pleased with her. It was the first Italian queen I ever saw. I was so afraid the bees would kill her I got three hatching combs (as you directed in the A B C book), and put them in a hive, and put her in with them, but I did not let her out of the cage until next morning, and I was glad I did not; for when I looked at them the next morning the combs were nearly covered with ants. I got them off and brought the bees into the house, and they are in here now. The ants killed all of them that hatched that night, so you see I nearly lost my queen. L. S. COCKE.

Ward's Mill, Ill., June 7, 1885.

Friend C., where combs or queens are taken away from the bees, and set down carelessly, ants are liable to do considerable damage. Many fine queens have been killed in this way.

FRIEND JACOB'S REPORT.

Here is my report for 1884, up to the present. I started with 11 swarms in box hives; increased to 19. I put all of my new swarms in frame hives. I got 127 lbs. of honey, for which I got 12¼c. I lost three swarms last winter. They were weak ones and should have been united. The rest of them are in good condition. I have one stand of Italians. It sent out a fine swarm the 24th day of May; the second swarm, the 5th of June. I have had only four swarms. Now I want to make bee-keeping pay. I love to work with them, but my pa and neighbors say I can't. They say that there are too many bees in this country now. I tell them that is why I think this to be a good bee-range. We have poplar, white clover, and sourwood, and lots of it too. It is true, that every farmer has bees, from one to ten stands, all in box hives.

Here I had to stop writing to hive my third swarm of Italians—two queens in this swarm. This is three swarms and three extra queens that I have got from this hive, besides one that was killed in the second swarm. JACOB W. MILLER.

Daysville, Ky., June 7, 1885.

DOOLITTLE'S WAY OF MAKING NUCLEI.

I tried friend Doolittle's way of making nuclei, and at first I made a failure of it, as they killed the queen, and nearly half the bees died. I made them fill themselves well with honey, but did not think of putting candy in, which did all the mischief. Next time I put candy in, and it worked all right, and I thank friend D. for bringing it up. Some of the bees will return, but not many. Of course, the 1-lb. package for sending away bees by the pound will do for a box to put them in. You presume friend D. puts his best queen in, but I am certain I would not do so.

SHIPPING BEES WITHOUT A QUEEN OR BROOD.

What is your experience in shipping bees by the pound, without a queen or brood? At a loss of five lbs., I do not think it is a good way of putting them up, and I am quite certain it is not good for them to be confined in those small packages without a queen, as they tear around till they are very nearly exhausted or worn out; but just put a queen or a frame of brood in, and they seem to enjoy the trip hugely; and, again, I think the 1-lb. packages as you make them are too small for a pound without a queen. Why not put them up as friend Foster, of Iowa does? C. WECKESSER.

Marshallville, O., June 12, 1885.

We often ship bees without queens, friend W., and I have not been able to discover that they did worse without a queen than with, although I may be mistaken. I know they sometimes tear around until they get themselves quite exhausted, and I presume kill themselves, many of them, by fright or worry; but I was not aware that they did this any worse when queenless, although I am aware that the presence of a queen or a little unsealed brood exercises a very marked influence in the way of pacifying bees when they get in an uproar.—In regard to the one-pound packages being too small, we have frequently sent 1½ lbs. in a package, and had them go safely, and it is only during the extremely hot weather that as much room is needed as we allow. Perhaps you measured a pound of bees when their bodies contained no honey. If so, a pound makes a good many. During the honey season, each bee contains more or less honey, and we can not very well put them up in any other condition. We do not remember that we ever heard how friend Foster does put up bees. Won't you tell us? I know he sells bees very low, and makes successful shipments.

A BEE-KEEPER IN TROUBLE AGAIN.

I have four swarms of bees out of eleven I had in the fall. I should like to sell three of them, but I don't know how I can get them to you. There are two double hives and one single one. I think they must be full of honey, as they have been getting it from the other hives where bees have frozen, and that, perhaps, is what makes them so cross and overbearing. Is not that the nature of some of the human kind—the more stores they heap up, the more unfeeling and quarrelsome they are?

But, about these bees. Can't you send an expert, or come yourself, and fix these bees in a shape so they can be handled or taken away out of my sight and hearing? I should like to see you walk up and conquer these savage little insects. I am at this writing smarting under their wounds. They take

me under my hat-rim on the back of my head, and I don't wish to have those bumps grow any more. If you can give me as much honey as you think there is in the combs, and pay for the bees, I shall be more than satisfied. Now, please come and get the bees; or if you can't do that, drop a card with some good advice. IRA BENNETT.

Windfall, Medina Co., O.

Friend B., it seems to me you have been handling your bees at unseasonable times again—possibly just during a gap between fruit-blossom and white clover. We should be glad to take your bees off your hands, because we need them now; but if you wait just a few days I think you will find they are peaceable and amiable again, even if they are hybrids. You want to learn to take bees as well as human beings on their best side; and when you find them spoiling for a fight, just wait until some other day, and then you will, in all probability, be able to get along without these unpleasant differences and bumps, where no more bumps are needed.

HOW FAR MUST THE OLD STOCK BE MOVED IN MAKING AN ARTIFICIAL COLONY? ETC.

Will you please tell me whether the bees would stay in a new hive where you had made an artificial swarm, and gave them a new queen, if I only move the parent stock to the opposite side of the bee-house? I had figwort and spider-plant seed sprout in less than a week, by making a small hot-bed and covering it with glass. The spider plants were large enough to set out in two weeks. My bees are in fine condition, and building up very fast. They are gathering honey very fast from locust.

FRED W. CRANSTON.

Woodstock, Ohio, June 5, 1885.

We do not understand your term "bee-house," friend C. If you mean honey apiary, moving your colony to the opposite side would do very nicely, I think.—If you had spider plants ready to transplant in two weeks from the seed, you certainly did well. We have had a great deal of trouble in transplanting the spider plants this past season, although it usually seems very hardy.

VALUE OF A COMB FILLED WITH POLLEN.

Will you please tell me which is worth the most to a swarm of bees—a nice card of comb which is three-fourths full of pollen, or a sheet of foundation? Will bees clean the pollen from combs, if hived on such? MRS. JENNIE COLLINS.

Romeo, Mich., June 6, 1885.

The answer to your query will depend on circumstances. If bees have their combs already full of pollen, a comb three-fourths filled with pollen would be no advantage, but, rather, a detriment. On the contrary, when they are short of pollen, as bees are here almost invariably in the spring, a comb of pollen would be a very great advantage to them.—I should say, that a comb of good pollen is worth a good deal more than a sheet of fdn., on an average. If the bees are hived on combs containing too much pollen, they will usually use it all up in brood-rearing. I can not tell, though, what they would do in case it were not needed for brood-rearing. Very old pollen they sometimes take from the cells and throw it out from the entrance.

AN OREGON BEE-TREE.

We clip the following from the *Portland News*:

TEN FEET OF PURE HONEY.

A short time ago Samuel, Asa, and Joe Holaday, of Scappoose, took a trip over to the Lewiston River, in order to look into the resources of that region. They found it a most beautiful country, and one that offers many inducements to settlers. The part visited lies off in the direction of Mount St. Helena, and is composed of both timber land and fine open tracts, which abound in game, large and small. While encamped on the river they discovered an object that was novel and interesting as it is beautiful and striking. In their rambles through the pine wood they suddenly came upon a fallen tree across the path, which, on inspection, they found to be hollow. Through a knot-hole they could see something white, and at once began to investigate. They sawed into the log, and were surprised to find that the whole interior of the log was filled solidly with honey. They at once brought from their camp some of their vessels to fill with this sweetest of all nature's productions. Their buckets and pans were soon filled. Then they sawed off another length of the log, and found it still solid with honey. This they repeated, and took from it honey until they opened up ten feet of pure, lovely honey, which yielded a comb that was in many places four inches thick. Of this find they carried away 180 pounds, which they declared was the finest they ever tasted, being far richer than the tame honey which they produce.

GOOD PROSPECT AHEAD FOR BASSWOOD.

Our prospects for a honey flow down in this section are not very promising, as about all the old clover crop of last year was frozen out the past winter, but with the favorable weather of the last two weeks the basswood, or linden, will keep them busy two or three weeks, as I have never seen as good a show for bloom since it has come under my notice. Our creek bottoms are covered with the trees in every direction; and as bees are so few there will be a good many trees untouched. I came out in the spring with 5 prime and 3 weak colonies; have had 4 good natural swarms. The first came off the 15th day of May; the last, about the 5th of June, and I have built up my weak stock strong enough to store in boxes. From one-half pint of bees to a chaff hive full is pretty fast building up. The yellowest and nicest queen I have does not raise as fine queens and workers as some very dark ones I have, as I get my best queens from the medium-dark queens.

Dennison, O., June 22, 1885.

C. J. HILL.

We are happy to report basswood-trees in our vicinity are also full of buds, ready to blossom in a few days.

A SUGGESTION FROM OUR GOOD FRIEND GEO. B. PETERS, AS TO THE CONTENTS OF GLEANINGS.

As there seems to be a disposition among the patrons of your excellent journal to *advise* you as to the subjects most proper to be treated in your issues, and as you seem to be feeling for the opinions of such patrons, I will, with diffidence, say that I think a bee-journal should treat of bees and their relations to other rural pursuits only, leaving to the professed divine to publish a newspaper on his theme proper, if one should be so disposed. I think the bee part of GLEANINGS is sought after with avidity by the apicultural patient, and the religious part read only by those who do not take a religious paper at all, or perhaps have no facilities for attending church. I think religion and politics should be eternally severed—also religion from the legal profession—that is, a mixing of the respective journalist, and I think bee-matters, and those things intended as a *salvo* for the ills of human nature,

should be sundered; believing that each one has importance enough to be dignified by its own special journal. Now I see you advance high authority on both sides of the question; and in your dilemma you invoke divine assistance to show you the course you are to pursue. Among your advisers is the name of Prof. Cook, advocating. Now, while I have great respect for friend Cook as bee-authority, I have none for his attempt to chalk out the course of a mixed-journal—that is, he is good authority on bees, but very poor on divine matters. Would it not be better to run two journals—one for apiculture and one especially for the faithful? In the present summing-up of testimony, I must side with friend Hutchinson and those of his opinion.

GEO. B. PETERS.

Council Bend, Ark., June 19, 1885.

Thank you, friend Peters, for your kind and frank letter; but I am sorry to see you for once with the small minority. I do not remember now of more than three individuals who have agreed with friend Hutchinson in his remarks. You are one of them, and the brother who first called the matter up, and friend Clarke, are the others; while those who have petitioned most vehemently for about the same variety in GLEANINGS it has been giving, are numbered by the hundreds. Perhaps I am at fault in letting it appear that I was in a "dilemma." I have been in no dilemma at all; for since I decided to seek first the kingdom of God and his righteousness, I have never, I may say, hardly *thought* of such a thing as turning back. I am asking God's blessing daily, not only in regard to what matter shall be used for GLEANINGS, but on our bee-keeping industry, and every thing pertaining to it. I do not mean to say by the above that I have always chosen just the wisest course between two extremes; for to err is but human, and I thank you for your kind letter, because it may help me to be more careful in some respects than I have been. I have thought of two journals; but one is all my strength will probably ever be able to compass; and if God gives me strength to do that one well, I shall be thankful.

RAISING FIGWORT AND SPIDER PLANTS BY COVERING THE SEEDS WITH MOSS.

I am one of your A B C scholars, and therefore I am somewhat interested in bee culture. Bees in this section of the country have wintered badly. Some have lost all; and what bees there are are mostly in log gums, except ours. We use your Simplicity hives. We had 15 stands last fall, but we have only 4 this spring—one strong and three weak ones. We purchased one ounce of figwort and spider-plant seeds from you this spring. We sowed some of the seeds in open ground, and some in boxes. About the first of May they were just coming up, when I saw the directions in GLEANINGS for covering with moss. I made a box 12 inches square and 4 inches deep. I filled it two-thirds full of dirt, and sowed the seeds thickly, and put an inch of moss over them, and put a pane of glass over the box. In just one week they were up. I think if the friends will do as I have done, they will have no more trouble about sowing the seeds.

This is a great country for white clover, and we have a few basswood-trees. The bees are gathering lots of honey from the locust-trees now. I think

you might tell us how to set out these figwort and spider plants—how far apart, and when, and all about it.

W. A. LOWER.

Maywood, Lewis Co., Mo., June 16, 1885.

Friend L., when the little plants come up very thickly, we take them up when they begin to have the second set of leaves, and plant them about an inch apart, in good soft ground in the greenhouse, or outdoors as soon as the weather will admit. Here they stand until they are three or four inches high, and then we plant them in the open ground about as far apart as hills of corn. The cultivation afterward is just about the same as for corn.

A CALIFORNIA BEE-KEEPER WITH 400 COLONIES.

I received the package of GLEANINGS a few days ago, and I was just delighted with them. The weather down here is awfully dry, but still my bees are working on very well. I have about 400 colonies in box hives, invented by Mr. J. S. Harbison, of San Diego, Cal. The section boxes used here by almost all the bee-men of this county are different from those in your catalogue. They contain about 2 lbs. of honey, and are put together eight in number, and fastened so that each one can be taken apart. We pack four such boxes in a case, or 32 sections, making in all about 70 lbs. to the case. I am glad to see that GLEANINGS comes out twice a month instead of once.

H. C. NORTH.

Engineer Springs, San Diego Co., Cal., June 15.

THE SEASON OF 1885.

Bees have done nothing but raise brood. Out of 44 good strong stocks, most of them *extra* strong, I have had two swarms; and they have on an average about 2 lbs. of honey to the hive, and no prospect that they will more than make a living for a few days, as clover is dried up on account of the drought. If we have rain soon we hope for a fall harvest, which generally commences about the 10th to the 15th of August. We had five days in fruit-bloom in which bees worked and gained several pounds per hive; since then two or three days they have gathered a little more than a living. With full honey selling in New York as low as 7 cts. per pound for box honey, it looks rather discouraging, and beginners should examine well before investing largely, as it is *very* difficult to sell out, without loss.

JOHN B. CASE.

Baptisttown, N. J., June 22, 1885.

Friend C., I do not believe that nice comb honey in one-pound sections has ever been sold at the price you mention in New York city. These discouraging reports, when sifted down, almost invariably prove to be the result of careless management.—We are surprised to hear that you have been troubled with drought. Here in Ohio, and, in fact, from most points where reports have come in, there has been almost a superabundance of rain—in fact, so much rain, that some complaint has been made that the honey was washed out of the clover before the bees had time to gather it.

WAS IT GOOD LUCK?

I bought 5 colonies of bees from D. L. Carpenter, of Seneca, Illinois, last May; three in your 2-story chaff hives, and two in what he called your Simplicity hives. The bees increased so that I went into winter quarters with 14 colonies; went through

the winter all right; lost one this spring by robbing, and two by dwindling; they have bred up well, and I think most of them are about ready to swarm. I had one swarm on Sunday. All but three were wintered in Simplicity hives packed with leaves. I think I had good luck, as three of my neighbors lost nearly all of theirs. One lost all, 25; another lost 13 out of 14; another 21 out of 22; and the oldest bee-keeper, about three miles from me, lost 50 out of 56; of 50 put in cellar, one saved six; six on summer stands lost all. Mine were all wintered on summer stands. Don't you think I had good luck with mine?

JESSE BRADY.

Little Rock, Ill., June 16, 1885.

HUMBAGES AND SWINDLES PERTAINING TO BEE CULTURE.

MRS. COTTON, AGAIN.

WE publish the following, just as it came to us.

Some time ago I got a paper from a voo-man by ze name of Lizzy Cotton, and she said would sell me a hive that bees would make two hundred pounds honey of; so I sent ze moneys; it was 3 dollers, and I paid one dollar and fifteen cents for ze expresman on it, and it was nodding boot a leetle hive, so big az 6 inches one way 24 inches de odder, ant she sent me a great big paber. I send him to you. Vat shall I do now? My moneys gon out, no hive but ze leedle bit of a hive, not so big as our coffy-mill. Mine nabor says you will make her sent it back to me, for I am poor, mit lots of leedle babies to eat honey. Mr. Root, tell us what to do, then I can read it in that leedle book mine nabor calls GLEANINGS, vat you sent out.

HERR CLABBERDEBOSH.

Aytalan, Wis., June 16, 1885.

My good friend, I am much obliged to your neighbor for his confidence in my ability to straighten up wrongs in bee culture; but Mrs. Cotton is a woman, and I can not do any thing with her, any more than to publish your letter as a warning to others who might be likely to send to her. Where a man is in business, and advertises implements in bee culture that do not give satisfaction, we can generally make him do the fair thing by telling him he will have to be published if he does not make his transactions satisfactory. But Mrs. Cotton evidently does not care whether her wares give satisfaction or not.

MRS. COTTON TAKES \$20.00 FROM A POOR WOMAN WITH BUT ONE ARM, AND THEN SENDS HER A PART OF A HIVE CONTAINING FEW BEES AND NO QUEEN.

Last week I was sent for by a lady acquaintance, who lives about half a mile from me, to "look at a colony of bees" that she had bought of Mrs. Cotton in one of Mrs. C.'s "Controllable" hives. The lady had received the bees ten days before, but had delayed having them examined till the expiration of that time, in accordance with Mrs. Cotton's instructions. An examination showed three frames with fair combs, two with inferior combs, mended and fastened in the frames with sticks, and one frame occupied with a sheet of foundation. I found bees enough for a small two-frame nucleus; no unsealed brood, and about as much sealed brood as would

occupy one side of a Langstroth frame. I also found four small queen-cells, sealed, and one uncapped, from which a queen had emerged, and one young queen about 12 hours old. I found the two side cases and a sample box each of the sizes Mrs. Cotton uses; and, of course, I found the wonderful Controllable Cotton hive without any cap, and my unfortunate lady-friend, who has but one arm, found twenty good dollars to pay Mrs. Cotton for all these "finds," and \$3.40 to pay express charges, and sixty cents to pay for cap for hive; and if that young queen gets lost, the lady will soon find that, without kind neighbors who can keep bees, but perhaps can not write books or invent wonderful hives, she will have, for her \$24 investment, little besides the wonderful Cotton hive and a few combs of no great value. If you think the above in relation to Mrs. Cotton's shameful treatment of this lady will be of service as a warning to others, you will please give it publication. JAMES KNOX.

Quincy, Ill., June 15, 1885.

The above verifies what several of our subscribers have before suggested, that Mrs. Cotton sends out a hive with nothing but queen-cells instead of a queen, and this, too, where she gets \$20.00 for what her advertisement would lead any one to suppose would be a full colony of Italian bees, and in a finished and complete hive.

NOTES AND QUERIES.

THE honey crop threatens to be the greatest failure ever known in this State. The ordinary white-clover season is nearly past, but our bees have found scarcely enough white clover to be self-sustaining. The poplar, or tulip, fortunately, yielded unusually, and enough is stored, I think, to insure successful wintering without feeding. S. W. MORRISON, M. D.

Oxford, Chester Co., Pa., June 20, 1885.

THE NEW CARP-BOOK.

Carp A B C received, and I went down to the carp-pond and witnessed the hatching of thousands of eggs. I shall soon have all the fish I can eat, and some for an occasional fish picnic.

Dresden, Texas, June 16, 1885. B. F. CARROLL.

RECIPE FOR HONEY-CAKE.

Will you allow me to make a little improvement on my recipe for honey-cake, as follows? Two cups of honey, one cup of sour cream, four eggs; flavor with ginger and cloves or allspice, as preferred. Warm the honey enough to make it thin; mix soft.

MRS. L. M. HARDISON.

Santa Paula, Cal., May 8, 1885.

NEW HONEY.

I am a young man 23 years old. I have commenced raising bees. I began this spring with three hives of bees. They were blacks. I have seven hives now. I have taken 215 lbs. of honey this year from the three hives I began with, all in comb, and one of them is filled again. I took the honey from them the 23d of May. I got 50 lbs. at that early date, and they have it all new and white again. I examined them yesterday, and found the new comb all sealed again. I find that there is profit in bee-keeping. J. W. TAYLOR.

Ozan, Ark., June 14, 1885.

HONEY-DEW IN 1885.

I will say that there is an abundance of honey-dew to be gathered here now in the woods; but for reasons best known to themselves the bees do not notice it yet, for which we are truly thankful, and hope they will continue to let it remain. Sweetness "wasted on the desert air." Bees strong, and prospects good for white clover. M. W. SHEPHERD.

Rochester, Lorain Co., O.

BROOD AND POLLEN IN THE SECTION BOXES.

Our bees are putting brood and pollen in the section boxes. What is the cause?

Lower Salem, O.

SYLVESTER BABSON.

[This matter has been very fully discussed in our back numbers, and also in the A B C book. Perforated zinc honey-boards, perforated wood honey-boards, slotted honey-boards like Heddon's, the use of separators, and a great many other devices are used to discourage the queen from going up into the sections. Considerable depends upon the construction of the hive, but I believe there is not much trouble of this kind.]

I bought one hive in the spring of 1884, and one in July; also one in November, and all lived through the winter. Two were in box hives, and I transferred them and gave them Italian queens, and I divided my strongest hive on the first of this month, and all are doing well. We have a grand honey-flow from the locust. Bees all died, or about all, in this part of the county this winter and spring.

CHARLES E. HARDESTY.

Conotton, Harrison Co., O., June 8, 1885.

As I have been pretty busy this spring I have not had much time to write. Well, I lost all of my bees (6 colonies) last winter and spring; four from dysentery, and two from spring dwindling, and now all together I have spent \$45.00, and have sold but \$5.00 worth of honey and wax. Now I have got on hand ten Simplicity hives and fixtures, besides 50 empty combs. I am not going to give up yet, just as I am beginning to get used to bee-keeping, and have got the fixtures. Our strawberries are getting ripe. We sold four bushels Friday last. C. W. BOND.

Jackson, Mich., June 22, 1885.

NEW SWARMS GOING INTO EMPTY HIVES.

Speaking about swarms going into empty hives that are standing around, a few years ago when Mr. George Haven kept bees he had two come out at about the same time, and alight separate. He carried a hive, and put it down near one swarm, and then went to live the other; and when he got back to his hive the bees had gone into it. I think he said the empty hive was a rod or more off. I had in fall, 70; spring, 40; have 56 good ones now, and increasing rapidly. JOHN CROOFOOT.

Bloomington, Mich., June 16, 1885.

Do bees go to sleep regularly?

[Bees do not go to sleep at all, friend H., that we know of, unless it is in the winter time. It is pretty certain that they do not sleep "regularly," if they sleep at all.]

Are black bees more likely to abscond to the forests than Italians?

[I do not believe the black bees are any more likely to go to the forests; but if any thing I should say it is the other way.]

Will packing chaff hives with rags be better for wintering? H. A. HYLE.

Redwood, N. Y., June 1, 1885.

[I do not believe I should like rags for packing as well as clean soft chaff.]

FRAMES OF BROOD WITH OR WITHOUT BEES, FOR BUILDING UP.

ALSO SOMETHING ABOUT BUYING UNTESTED QUEENS.

IN the A B C book you speak of building up colonies by taking frames of *bees* and brood from *different* hives, and putting them together, etc. Now, in my short experience with bees (this is my second year) if I wanted to build up a weak colony I would always shake off all the *bees*, and just carry the frame of brood to the weaker hive. I have always been afraid of making a rumpus, or starting a fight, by putting even a few strange bees in the hive. If I understand right, such care was not necessary, only, of course, I should not take my old queen along. Please make it a little plainer.

I have got untested queens of you twice this spring—the first in the beginning of May, with one-half pound of bees. I got them started all right, but the queen was no good. I helped them along with brood from other hives, and the queen laid some, then she got to laying, as Mr. Garwood tells in the June GLEANINGS, two or three in a cell—in the bottom, on one side, and near the bottom on the sides. I didn't understand, but left her alone, and about the 1st of June all at once she was gone. I do not know where, and they had started queen-cells, and have a young queen now. I think the old one was about played out when I received her—one you had got from the South, probably in the spring rush. The other queen which I received about the 25th of May, I think is first rate, but dark.

S. L. LOPAR, 9-6-0.

Indianola, Iowa, June 22, 1885.

Friend L., I think you will find that we describe how to employ both methods, in the A B C book. Where you want to strengthen a weak colony, get a comb containing *hatching* brood, and put it in your colony to be strengthened, without bees. The reason why you shake off the bees is, that they might kill the queen of the weak colony. The only difficulty in this plan is in finding the comb just right for your weak colonies. If it contains too much unsealed brood, the bees of the weak colony may not be able to nurse it well, and this will occasion loss. Or if it contains more sealed brood than the weak colony can cover and take care of during the cool weather, loss might ensue. What you want is a comb containing a moderate patch of brood, all of it sealed, and some of it hatching. Shake off all the bees, and you have got it exactly. The other plan is where you want a nucleus. Take the comb—brood, bees, and all—from say three or four different hives. Put them all in together in a new hive, or nucleus hive, and there will rarely be any disagreement; for none of them are at home, and they soon get mixed up so that they do not know which is which. As soon as they settle down peaceably together, and start queen-cells, you can usually introduce the queen without any shaking, or they will take nicely to a queen-cell.

Friend L., you bought two untested queens—one good and one poor one. The good one is worth all you paid for both of them; but as a rule I should say that nine out of ten prove to be good prolific queens. I think

your remark unkind and uncharitable, both to myself and the friends in the South, when you intimate that any of us sent you an old queen. I know it is very common for those who make a purchase, to declare the queen is old or unfertilized, if she happens to fail or die; and I am obliged to remind our customers very often, that queens are no exception to the rest of creation; and after a long trip through the mails, it ought not to be surprising that some should fail, or prove to be short-lived. We have but little opportunity for judging of the age of a queen-bee by her looks; therefore too many of us seem to jump at the conclusion that queens never die unless from old age, which is not true of any kind of animated nature. Perhaps, friend L., you intended what you said for pleasantry. None of our employes ever let a queen go to a customer until she is laying, and we have every reason to believe she is all right; and I have good reason to think that those in the South, from whom I purchased queens, are equally conscientious. Untested queens are, of course, sent without any guarantee; but for all that, the trade increases largely in them year after year. This season, I should say that 90 per cent of all our orders for queens are for untested, even though a few have turned out badly, like the one mentioned. Where the queen never lays at all, we have been in the habit of replacing her; but where she commences to lay, and soon fails, the purchaser has to take the same chances that we do in buying.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,

EDITOR AND PUBLISHER,
MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, JULY 1, 1885.

But God hath chosen the foolish things of the world to confound the wise; and God hath chosen the weak things of the world to confound the things which are mighty.—1. COR. 1:27.

We have to-day, June 27, 1885, 6404 sub. scribers.

REPORTS WANTED.

We should be glad to know how those having reversible frames like them thus far.

BUCKWHEAT WANTED.

If any of our friends have any of the common gray or silverhull for sale, will they please let us know how many bushels, and what they will take for it?

WATERBURY WATCHES.

WHILE still more important improvements have been made in these watches, the price is still lower. We can now send GLEANINGS for one year to every one who will purchase a watch at the regular price, \$3.50. Where you have recently paid us a dollar for

GLEANINGS, you may have the watch for \$2.50. Or if your time is nearly out, you can have GLEANINGS for another year for every \$3.50 you send us for a Waterbury watch. Where the purchaser does not want GLEANINGS at all, the price will be \$3.00; two watches, \$5.75, or five for \$12.50.

BEEWAX AND FOUNDATION.

For the present we can not offer over 20 cts. cash for wax, or 25 cts. in trade. The reason is, we have so large a stock on hand, and there is so little demand for foundation. We will also give a discount of 10 per cent from figures in our price list for all orders for foundation received after July 1.

MR. LANGSTROTH.

Our old friend is feeling so much better that we have the promise of something valuable from his pen for our next issue, no preventing providence. In a letter from him dated June 26, we find the following extract:

It will surprise many to learn that, more than a hundred years ago, some writers on bee culture attributed dysentery to the eating of pollen, while others thought it was caused by the want of sufficient pollen.

A LITTLE BOOK ON FOUL BROOD.

We have just received a little book entitled, "Foul Brood: Its Management and Cure," by D. A. Jones. In the book, friend Jones considers chilled brood, neglected brood, overheated brood, drowned brood, dead brood, dead larvae—all these as well as foul brood. We can furnish it from this office for 10 cts.; by mail, 11 cts. Although friend Jones does think that foul brood may sometimes be generated spontaneously, we think the little book is well worth the money.

ANOTHER JOB LOT OF WIRE CLOTH.

We are unable to get any more at the very low price of 1½ cts. per square foot, but we have secured a splendid lot of regular goods of the following widths: 24, 26, 28, 30, 32, 34, 36, 40, 42, and 46 inches, which is put up as follows:

12½ rolls of 200 s. f. each, 2 of 36, 1 each of 40, 120, 180 s. f.
24 4 rolls of 216 s. f. each, 1 each of 195, 87, 69 s. f.
28 16 rolls of 233 s. f. each, 1 each of 46, 116, 70, 240 s. f.
30 16 rolls of 250 s. f. each, 1 each of 158, 125, 30, 225, 2 of 60 s. f.
32 1 roll of 94 square feet.
34 5 rolls of 283 s. f. each, 1 each of 62, 113, 198 square feet.
36 11 rolls of 300 s. f. each, 3 of 75, 1 each of 60, 225, 120, 150, 210.
40 1 roll of 235 square feet.
42 1 roll of 350 square feet.
46 1 roll of 192 square feet.

The above we can sell at 1½ cts per square foot. The manufacturers have given us these remarkably low figures in consideration of the very large orders we have been giving them for a year past. I tell you, my friends, when the bee-keepers of the world unite together in purchasing a certain line of goods, it takes a pretty big factory to supply them.

QUEENS MISSING IN SHIPMENTS.

PROBABLY none of the friends who sell queens, bees, and nuclei, have been very long in the business before more or less complaints came that certain colonies or pounds of bees contained no queen. The question then arises, Did the shipper omit to put in the queens, or did the receivers let her get away by some accident after the package was received? It should be borne in mind, in deciding such questions, that no one is hardly ever safe in declaring there was no queen among the bees, simply because he could not find her. The best of us frequently look in vain for a queen, and sometimes in a comparatively small body of bees, and yet she is there all the while. The universally accepted and plain way of settling the matter beyond dispute is to look for queen-cells. With a nucleus

or a hive of bees, the matter is easily settled. If no queen was put in when the bees were started, queen-cells will always be found at the time they are received, and the purchaser should, of course, write back at once, "You either omitted to put a queen with my bees, or she was lost by some accident about the time of shipment, for queen-cells were built, and well along when the package was first opened." With a pound or half a pound of bees, the matter is not so easily settled; but as such packages of bees should always be let loose on a comb of sealed brood, the absence of the queen should be settled decisively within 24 hours: for if no queen is present they will start cells on the brood given them, in about that length of time. A good many of the friends who receive bees are inexperienced, and sometimes thoughtless, in writing back to the shipper that he did not send any queen, for the simple reason they looked and did not find her. Now, unless this matter of queen-cells is understood and plainly mentioned, I should say the purchaser is not entitled to another queen free of charge.

HOW THOSE STRAWBERRIES TURNED OUT.

WELL, my friends, they turned out magnificently, if that is the word for it. Our strawberry-patch was worth all it cost, just to see the whole family—Maude, Connie, Caddie, clear down to Huber, mamma included—and all as busy as they could be, gathering the ruddy treasures. There is one thing about this strawberry business that astonishes me; and that is, that people have been lazily sleeping over the matter, as it were, until almost clear up to this year of 1885, before they knew what a feast and what a "picnic" we could all of us have with so little exertion. Strawberries have sold in our market as low as five cents a quart, and loads and loads of them have been consumed. But it did not matter to us what price they were up street; we had them at home of our own raising, and they were ahead of any that could be bought in the market. Now, one more thing surprises me, and that is, that people do not with one accord give a great big vote of thanks to the man who first gave us the Sharpless strawberry. Why, on each side of our row of Sharpless plants, the ground is covered with great "chunks" of luscious fruit, as juicy and as delicious as one of the finest pears, and you do not need to wait until they are real ripe either. As soon as you can see one of these great berries colored, you may be sure it is good to eat, and without any sugar. I never ate any fruit in my life that I so thoroughly enjoyed as these great awkward chunks of berries—berries so large that you could take a great big bite, and then look at the beautiful, juicy, ruby flesh on the inside of a berry where you have bitten it. Huber finds it a hard matter to get some of them into his mouth, so he can get a good square bite. Perhaps the reason why our Sharpless berries have been superior to any of the other varieties is, that they occupied the double furrow in the center of our bed. You will remember, perhaps, what I told you about it last fall—the way we plowed and harrowed and subsoiled that piece of ground, and then covered it three inches deep with the best old well-decomposed stable manure we could find. Well, I tell you it was a paying investment. All the Sharpless berries we had to sell brought 15 cts. a quart, while the common varieties sold at from 5 to 8 cents. Our best day we picked 37 quarts.

THE A B C OF CARP CULTURE.

By a misunderstanding between the author and publisher, we fixed the price on our carp-book at 40 cts., when it should have been 50 cts., by mail postpaid. Hereafter please remember that the price is 50 cts., and it is a good large book (104 pages and full of pictures) even then, for the money. We think it will be an exceedingly difficult matter for any person to ask an intelligent question concerning carp culture, which is not fully answered in this book.

A FRIEND asks how to get a swarm of bees to go into a chaff hive. He says the entrance is so small that he has tried two swarms, and could not get either of them in. Our friend could have managed it very easily by shaking the swarm, or pouring them into the top of the hive. He would have to get them down to the brood-frames then, and use the enamel sheet or honey-board, or they would be very liable to commence their combs on the cover. We have never had any trouble by making them go in at the entrance, although of course it would take a little longer than if we could enlarge the entrance to any desired extent, as we can with the Simplicity hive.

IMPORTANCE OF SENDING QUEENS PROMPTLY.

We have been at times during the past month as much as a week behind on our orders for untested queens; but the orders have been so much more numerous than we ever knew them before, that we were not prepared for such a trade. It has hurt our business, I know; and I am resolved that, if possible, we will not have this happen next season. As an illustration of the trouble that delays make on this kind of merchandise, I make the following extract from a letter of complaint: "I paid — for three queens April 22, and walked fifty miles to the postoffice to receive them." Now, we hardly think that the above friend walked fifty miles expressly for the queens; but if he had to wait just 60 days, it may have been pretty near it. Do you see the point, brethren? The queen-breeder mentioned above would have to pay his customer five or ten dollars, perhaps, for the annoyance and bother he has caused.

LOTS OF THINGS TO BE THANKFUL FOR.

HERE at our house we are having sixteen long hours of daylight every day, sunshine in unlimited quantities, and a great abundance of rain just about as soon as somebody begins to talk about dry weather. On top of it all, your humble servant is enjoying perhaps the best health and spirits he has ever known. Do you want to know how he got it? Well, a good deal of it came from digging in the soft black dirt down by the carp-pond every morning, just a little before sunrise. That is where our cabbage-plants, sweet corn, Hubbard squashes, etc., are, and there are two coops of young Brahma chickens down there that help every morning by chasing bugs off the cabbages. You see, when I get off down there so early, the office is all left behind me—there is not even anybody around to ask questions; and there all alone with the chickens, plants, and God, is it any wonder that I get happy and *well*? When it comes breakfast time, I never need urging to eat; and what I eat gives me strength, so that I manage the duties of the day without much trouble or fatigue—especially if I can play with the cultivator and other farming tools about every alternate hour in the day.

KIND WORDS FROM OUR CUSTOMERS.

The 50 lbs. of comb fdn. came promptly, and it is very nice. Many thanks for promptness. Express charges were moderate enough. W. S. POWDER.
Groesbeck, Ohio.

Your last sections were nice, and also your section foundation. This is why I sent to you also this time. I can get my goods nearer home, but your fdn. was nicer than some years ago. H. M. MOYER.
Hill Church, Pa., May 30, 1885.

GOOD TIME ALL ROUND.

The untested queen you sent me the 21st was received the 22nd, introduced morning of 23d; liberated at evening, 24th; is laying this 25th. Many thanks for prompt shipment. C. A. RICKETSON.
Quincy, Mich., May 25, 1885.

OUR 75-CENT TELEPHONES.

The telephone received from you is put up; and as a proof that it gives satisfaction, you will please send me three more. JOS. LOGEROT.
Ledonia, Tex., May 19, 1885.

ONE REASON WHY FDN. MILLS DO NOT WORK SOMETIMES.

The mill works nicely. I find my trouble last year was entirely due to the impurity of the wax. You may remember what a nuisance I was to you. Fort Wayne, Ind., May 22, 1885. ROLAND HOLMES.

MOORE'S CRATE FOR THE SIMPLICITY HIVE.

I got the goods all right, and must return you and your clerks my thanks. I am well pleased with all. I like those Moore's crates for Simp. hives very much. I have some nearly full now. Bees are doing very well; I had one swarm, but don't think there will be many. I lost very few in winter. Shepherd, Ill., June 4, 1885. WM. ROUSE.

KIND WORDS FOR THE A B C BOOK.

I sent a few days since through Mr. Weaver, of this place, for your A B C book, and to say I am delighted hardly expresses it. I am amused and pleased, too, with the way—the common-sense way—in which you ———. I don't know but your book may work a great change in my pursuits ultimately. I like the spirit of your book. Rev. C. E. CLINE.

Emmetsburg, Iowa, June 18, 1885.

STRAIGHT MEN.

Your account is, I presume, all O. K. I never keep an account when I deal with *straight* men, and I feel assured that you are. W. VERMILLION.
Bradford, Ohio, May 13, 1885.

[Thanks for your kind words, friend V.; but I do not quite approve of your way of doing. I would much rather that everybody who deals with me should keep account, and look carefully to see that no mistakes are made.]

AN ENTHUSIASTIC BEE-HUNTER.

The smokers were received in tiptop order in due course of mail, and now we request you to send one Clark smoker to R. J. Israel, principal keeper of Point Loma Light-house, San Diego, Cal. He is a big bee-man. He has dug two swarms out of the hills. Point Loma is nine miles long and five miles wide, and he has made the whole peninsula a howling wilderness—to get these bees. Send him a smoker. ISRAEL & Co.

San Diego, Cal.

THE "MIX" IN GLEANINGS.

I think as long as you print so much of interest about bees and honey as you do, we ought to be satisfied. Honey is good, but we could not very well live on it; and in this place we can not make a living by producing it. If I never own another bee, I shall take GLEANINGS for the other matter in it, aside from bees and honey. The Home talks are worth the price to me. So as long as I can get the means, I shall take GLEANINGS.

Mitchell, Mich., June 8, 1885. Mrs. F. L. CHURCH.

A KIND WORD WITH A MORAL TO IT.

I received the duplicate package of bees on the 13th inst., all in fine condition. They are now doing their level best, cleaning house and carrying in pollen. I wish you could know with what satisfaction I received them—not for the value of the bees, but for the pleasure it gives me to have another name to add to my list of business men who think more of their word than of their pocket; for I believe if Providence has any special favors to bestow it will be for the man who regards his word. Thanks, friend Root. W. H. PELTON.

Lanesboro, Pa., June 15, 1885.

THE WAY PROMPTNESS IN BUSINESS WINS CUSTOMERS AND KIND WORDS.

The goods ordered by wire came all right in three days to my home, seven miles from the depot. I really did not know of living in such a fast age. I am deeply in love with you and all your clerks, the packers and shippers included, for your perfect business way of doing things. I want your corresponding clerk to know I highly esteem her punctual, carefully written, and Christianly directed letters. I do not wonder at your success. It's perfectly natural. J. L. CALDWELL.

Mart, Tex.

GLEANINGS AS AN ADVERTISING MEDIUM.

We did a little advertising with you one year ago, and have had a large order this spring.

Fabius, N. Y., June 1, 1885. KNAPP BROS.

In consequence of advertising in GLEANINGS, we are receiving "many more" orders for queens than we expected, and, in fact, more than we had queens to fill them with; but will be in good shape in 3 or 4 days. Will you be good enough to suggest to readers of GLEANINGS to be sure to write their name and address very plain when ordering goods? Almost every one writes the main body of their letter plain enough; but when they come to their name and address they simply make "crow-tracks." We have received one order already that we can not tell where it came from.

Clarksville, N. Y., June 8, 1885. SNYDER & THIPP.

GLEANINGS is a good advertising medium. Our advertisement in it has brought us a large trade. We haven't written you a word yet about the hive machinery we got from you. It works like a charm. RIP-SAWS VS. CUT-OFF SAWS FOR MAKING DIAGONAL CUTS.

Here let us mention one thing. In your A B C book you say, on page 117, to cut out the miter across the end, have your cut-off saw keen and sharp. We wish you would sharpen an 8-inch rip-saw and try it, instead of the cut-off. We saw out that strip all the time with a rip-saw. You may think, because it is across the grain, that a rip-saw won't cut; but it will; we make it a success, and can cut 100 with a rip-saw while we would cut 50 with a cut-off. DIXON & DILLON.

Parrish, Ill., June 9, 1885.

[Friends D. & D. it depends on the kind of lumber you have, somewhat, as to which of the two saws should be used. For nicely seasoned clear lumber, a rip-saw keen and sharp works just about as you mention. Thanks for the kind words.]

"HIS LOVE CONSTRAINETH US."

Was it not a little unkind in you to so hurriedly intimate that I had not acted honestly with you? I love Christ, and his "love constraineth us." Christians will nearly always do as they agree to, at least as nearly as they can. I have had the money saved on purpose for you ever since I said "make out your bill and I will remit." But it is all right, Bro. Root; I am a stranger to you, and I have no doubt you sometimes get deceived as to your man.

Valley Spring, Tex.

O. P. STARK.

[May God bless you for your kind way of putting it, friend S. Please forgive me, if I was a little hasty. The way it came about is, that our book-keepers have instructions to note carefully whatever promise is made when a man is trusted; and whenever a man fails to keep that promise, they are instructed to notify him promptly. You see, we have to work here by general rules, for the magnitude of our business is now away beyond my constant oversight.]

QUEENS NOW READY.

DARK LEATHER-COLORED.

OR LIGHT ITALIANS.

TESTED, \$2.00; UNTESTED, \$1.00 EACH, OR 6 FOR \$5.00.

Address all orders to

E. PETERMAN, WALDO, WISCONSIN.

13tfdb

DADANT'S FOUNDATION FACTORY, Wholesale and retail. See advertisement in another column. 3btfdb

Italian Bees in Langstroth Hives.

\$9.00 PER COLONY, 3 FOR \$25.00.

Safe arrival guaranteed. Will give satisfaction. Correspondence solicited.

JOHN M. RAGLAND.

13tfdb 418 Broadway, Denver, Colorado.

CHEAP BEES AND QUEENS.

I will furnish ten 3-frame nuclei of bees, brood, and honey, with dollar queen, for \$3.00 each. They are Italian bees in L. or S. frames, and the frames will be not less than one-third full of brood. Terms, cash with order. Order at once.

13d JNO. W. MARTIN, GREENWOOD DEPOT, ALB. CO., VA.

Glass Front has the Ideal Veil. It saves your eyes, is light, durable, convenient, practical, progressive. Sure to delight you and your family. Only 65c. postpaid. **KANAWHA VALLEY APIARY**, JNO. S. CAPEHART, Supt., St. Albans, Vt. Va. 13d

TEN COLONIES HYBRID BEES FOR SALE at \$5.00 per colony. **ANN A. GRAVE**, Adams, Gage Co., Neb. 13-14d

FOR SALE. A 4-horse-power boiler, B. W. Payne & Sons' make. Has been in use about one year. It is as good as new for service. Has crack in base which has been riveted. Will sell boiler complete with pump and heater for \$90.00. 13tfdb LEE CROSBY, Columbus, Warren Co., Pa.

BEE-HIVES,

One-Piece Sections, Section Cases, Frames, &c.,

OF SUPERIOR WORKMANSHIP, FROM

SMITH & GOODSELL,

Manufacturers of and Dealers in

APIARIAN SUPPLIES,

ROCK FALLS, WHITESIDE CO., ILL.

13tfdb

Send for Price List

W. Z. HUTCHINSON,

ROGERSVILLE, GENESEE CO., MICH.,

Is now making a specialty of rearing fine Italian queens. All queens reared from the purest and best of mothers, and the cells built in full colonies. No queens sent out that would not be used in the home yard. Single queens, \$1.00; six for \$5.00; twelve or more, 75 cts. each. Tested queens, \$2.00 each. We can still furnish white-poplar sections. Make money orders payable at Flint. 13tfdb

15 Full Colonies of Italian Bees

FOR SALE

at \$8.00 each, with tested queen; \$7.00 each with untested queen; bees on 7 L. frames mostly wired, in shipping-box. Safe arrival guaranteed.

T. O. KEATOR,

13d

Accord, Ulster Co., N. Y.

FOR SALE IN MISSOURI.—A lot of Simplicity hives, 8 frames, nailed or in flat (top metal cornered), and 100 frames, wired for foundation, at 10 per cent less than Root's prices. C. B. THWING, Hamilton, Caldwell Co., Mo. 13d

EXCHANGE DEPARTMENT.

Notices will be inserted under this head at one-half our usual rates. All ads intended for this department must not exceed 5 lines, and you must say you want your ad in this department, or we will not be responsible for any error.

WANTED.—To exchange eggs from single and rose comb Brown Leghorns, Plymouth Rocks, Light Brahmans, and Pekin ducks, for warranted Italian queens—any number up to 20 fowls, and as fine as any in the U. S. Write at once.
12-13d JAMES CRAIG, Mt. Meridian, Augusta Co., Va.

WANTED.—To exchange strawberry-plants for bees, queens, or cash. Manchester, Jersey Queen, Iron Clad, Jumbo, Daniel Boone, Warren, James Vick, Big Bob, Piper's Seedling, Lacon, and Miner's Prolific. Price 30 cts. per dozen; \$1.00 per 100. Address
CHAS. J. SEELY, Greenville, Montcalm Co., Mich.

WANTED.—To exchange or sell German bees cheap. I will ship by express from a point 16 miles N. W. of Wilmington, N. C., 24 brown German queens, with bees, as follows: Queens (by mail, 25c each); with 1 lb. of bees, \$1.00; with 1½ lbs., \$1.30; with 2 lbs., \$1.50 each, in cages, the bees to be shipped July 27th to Aug. 1st. Safe delivery. Will exchange for tested Albino or Italian queens at \$1.50 each, to be sent me by July 20th. Orders must reach me here before I leave home—July 26.
3—ABBOTT L. SWINSON, 44—55.
13d Queen-Breeder, Goldsboro, Wayne Co., N. C.

W. C. EATON, Newark, N. J., will exchange Plymouth-Rock eggs (Rudd's strain, the great egg-producers) for bees.
13d

WANTED.—To exchange Chaff and Simplicity hives, wood brood and wide frames, sections in flat, or set up, at A. I. Root's lowest prices, guaranteed as well made, and as good material, for new extracted clover or basswood honey at 7 cts. per lb.
13d J. B. MCCORMICK, Fredericksburg, Wayne Co., O.

WANTED.—To exchange Horning Antwerp Pigeons (bred from stock that have flown 500 miles), also Light-Brahma fowls, or eggs from same, for tested Italian queens, wire netting, or offers.
13d W. E. FLOWER, Ashbourne, Mont. Co., Pa.

WANTED.—To sell or exchange 50 stands of bees for hives.
13-17db PETER METZ, Poplar Grove, Phillips Co., Ark.

WANTED.—To exchange Lester's improved scroll-saw and turning-lathe for wood or brass, new, for chaff hives in flat; price \$13.50; also tools, drills, and solid emery wheel.
13d GEO. P. SLOCUM, Honesdale, Wayne Co., Pa.

WANTED.—To exchange celery plants for a printing-press, type, etc., bound books, or offers. See advertisement in another column for prices.
A. T. COOK, Clinton Hollow, N. Y.

WANTED.—To exchange full colonies of bees for a good one-horse carriage.
13d H. R. BOARDMAN, East Townsend Huron Co., O.

HILL-SIDE APIARY.

QUEENS, & BEES BY THE POUND, NUCLEUS, OR FULL COLONIES.

Send for circular to

W. B. COGGESHALL, Supt.,

12d HILL-SIDE APIARY, SUMMIT, UNION CO., NEW JERSEY.

CYPRIAN QUEENS, 80c each. Hybrid bees, \$1 per lb. Write for prices on full colonies to
F. L. WRIGHT, Plainfield, Mich.

QUEENS. If you are in a hurry for them, give me an order. Fifty laying now, 90c each; 6 for \$5.00. Tested, \$1.50. Fine stock. Can be sent by return mail in my improved Pect cage.
13-17db L. HEINE, BELLMORE, QUEENS CO., N. Y.

Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they want to dispose of, we will insert notices free of charge, as below. We do this because there is hardly value enough to these queens to pay for buying them up and keeping them in stock; and yet it is oftentimes quite an accommodation to those who can not afford higher-priced ones.

I have about one dozen black queens. Price 20c; 25 hybrids at 40c. Hybrids are Italians mated with black drones. Untested Italians, \$1.00. Safe arrival guaranteed.

G. D. BLACK, Brandon, Buchanan Co., Iowa.

I have about one-half dozen hybrid queens (good ones) to sell at 40 cts. each by mail.

O. H. TOWNSEND, Alamo, Kal. Co., Mich.

QUEENS FOR SALE.—8 black queens at 30 cts., and 5 hybrids at 60 cts. All queens under 2 years old. Ready to mail at any time. Safe arrival guaranteed. Make money orders payable at Greensburg, Ind. H. F. SHANNON, Spring Hill, Decatur Co., Ind.

Hybrid queens, 25c each, postpaid. Blacks, 15c.
A. B. SURBER, Center Point, Kerr Co., Texas.

I have two choice hybrid queens which I will sell for 50c each.
J. L. HYDE, Pomfret Landing, Windham Co., Ct.

I have 25 hybrid queens to sell. Ninety per cent of the bees from these queens are three-banded. I will take 50c apiece.
C. A. DEARBORN, (P. O. Box 267), Baraboo, Sauk Co., Wis.

Hybrid queens, 25c each, from cells taken from hybrid colonies in swarming.

L. T. HOPKINS, Conway, Franklin Co., Mass.

I have four or five good prolific hybrid queens, which I will sell at 40c each.
R. J. FOX, Natick, Middlesex Co., Mass.

I have 8 hybrid queens, which I will dispose of after July 15. Price 50 cts. Safe arrival guaranteed.
J. H. WEIDMAN, Riverside, Burlington Co., N. J.

I will sell hybrid and black queens, in July and August, at 35 cts. each, or 3 for one dollar.
W. A. SANDERS, Oak Bowler, Hart Co., Ga.

Five Italian queens, mated, hybrids so called; will sell them for 50 cents each.
J. A. GUNN & CO., Casky, Christian Co., Ky.

I have 13 hybrid queens and 6 black; will take 50 and 25c each.
J. J. HURLBERT, Lyndon, Ill.

I have 4 mated Italian queens that I will sell at 50 cents each, and two hybrids that I will sell at 25 cents each, ready now. Send in your orders to
D. O. WAKEFIELD, Waverly, Lancaster Co., Neb.

Try the Arkansas Brown Germans. I have 13 brown German queens for sale through July, for 50 cts. apiece. Tested queens. Guarantee safe arrival, if anybody wants them.

G. R. HIGHTOWER, Eureka Springs, Ark.

The best Queens out.

I will furnish queens from July 1 to September 1 for one dollar; warranted tested, \$2.00; after then the price will be the same as in A. I. Root's list. Queens all bred from an imported mother.

G. F. SMITH,
13d Bald Mt., Lackawanna Co., Pa.

Foundation-Mills Lower.

Until further notice, prices will be as follows: 4-inch mill, \$10.00; 6-inch mill, \$13.50; 10-in. mill, \$20.00; 12-inch mill, \$30.00; 14-inch mill, \$40.00.
A. I. ROOT, Medina, O.

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I have about forty black queens to sell at 25 cents each; and a few misnamed Italians at 50 cts.

A. H. HAMM, Kingston, Caldwell Co., Mo.

We have a lot of choice fine hybrid queens at 60c, and a few pounds of bees to go with them, if wanted, at \$1.00 per lb. Cash with order.

J. C. & D. H. TWEDDY, Smithfield, Jeff. Co., O.

Send for queens, blacks, 25c; hybrids, 35c; and untested Italians, 75c each.

G. W. ALBRECHT, Dundas, Calumet Co., Wis.

Three hybrid queens for sale at forty cents each.

M. ISBELL, Norwich, Chenango Co., N. Y.

I have a few hybrid queens at 50 cts. each. Those rather dark, 40c.

J. S. HOFFMAN,

263 Hepburn St., Williamsport, Pa.

I have about 20 black and a few first-class hybrid queens that I will sell at 25c for blacks and 50c for hybrids, and guarantee safe arrival.

J. RAYMOND BALL, Knowlton, Quebec, Can.

I still have a number of choice hybrid queens that I will take 40 cts. each for, safe arrival guaranteed. Some of them are raised from pure mothers, but misnamed.

G. S. FOX, Mitchellville, Iowa.

I have 30 hybrid queens that I wish to dispose of. Price 40c each by mail.

J. G. COBB, Mt. Cobb, Lack'a Co., Pa.

One black queen for 2 Peet cages and one 2-cent stamp each, or 10 queens for 20 cages and ten 2-cent stamps.

A. L. LIGHT, Pastoria, Ark.

I have some 12 or 15 hybrid queens to dispose of between this and Sept. 1, which I will send postpaid for 35c each; also 2 blacks at 20 cents.

RUSSEL KILBOURNE, Jr., Clinton, Oneida Co., N. Y.

A few tested queens, whose progeny show 2-bands, for 75 cts. each. Also a few dark Italians for 50 cts. each, from pure mothers.

THOMAS HOKIN, Box 691, Sherburne, N. Y.

Bees and Queens

AT REDUCED PRICES.

I will sell two-frame nuclei, full of bees, brood, and honey, with warranted Italian queen, for \$3.00; also untested Italian queens for \$1.00. Give me a trial order, and you will get the worth of your money.

F. W. MOATS,

14d

The Bend, DeKalb Co., Ohio.

ADAM'S FOUNDATION FACTORY, WHOLESALE and RETAIL.
See advertisement in another column. 3b1d

HONEY COLUMN.

CITY MARKETS.

ST. LOUIS.—*Honey*.—Our market continues very dull. In fact, no demand for any kind of honey. Some new in bbls. and cans received this week. Southern extracted, nominal. In bbls., 40c; kegs and cans, Northern, 70¢ to 1.00, by single package. Comb Honey.—One shipment of new received. No demand, weather being so very warm; old, 80¢ to 1.20, nominal. New, held at 15c. *Beeswax*.—Very dull. About 25c, the very best price obtainable—stock large.

W. T. ANDERSON & Co.,

July 9, 1885.

101 N. Third St., St. Louis, Mo.

KANSAS CITY.—*Honey*.—Small lots of new honey are beginning to arrive. Prices about the same as last report. Choice 1-lb. sections, 15¢ to 16¢; 1-lb., 13¢ to 14¢; 2-lb., 10¢ to 12¢. Fancy new comb brings a slight advance on these figures. Extracted, new Southern, 5½¢ to 6¢. Cal., 7c. New white clover, 8c.

Beeswax.—Weak at 25¢ to 30c. We are now making a specialty of beeswax, and will pay highest market price for all we can get, and will furnish beesmen crude or refined wax at a slight advance on cost.

July 2, 1885.

CLEMONS, CLOON & Co.,

Cor. Fourth & Walnut Sts., Kansas City, Mo.

CHICAGO.—*Honey*.—There is very little doing in honey in this market. Not much offered, and fruit of all kinds is cheap, which perhaps retards the sale of honey. Comb, 12¢ to 15¢ for best. Extracted, 5¢ to 7¢.

Beeswax, 20¢ to 22¢.

July 11, 1885.

R. A. BURNETT,

161 So. Water St., Chicago, Ill.

DETROIT.—*Honey*.—The honey market is still dull, though not stagnant. Price is quoted at 10¢ to 12 cts.

July 11, 1885.

A. B. WEED,

Detroit, Mich.

FOR SALE.—2000 lbs. of extracted honey, white clover and lime. Honey is ripe, and of the best quality.

J. B. MURRAY, Ada, Hardin Co., O.

KIND WORDS FROM OUR CUSTOMERS.

Goods came all O. K. I don't wonder that you are overrun with work. Yours was one of the nicest lot of goods I ever received.

S. S. LAWING,

Henderson, Mo., May 14, 1885.

I regret very much that I ever let my subscription run out. I think Mr. Doolittle's article in May No. is worth the price of the book for three years.

La Grange, O.

C. D. MANVILLE.

A FRAME OF BROOD, A POUND OF BEES, AND AN UNTESTED QUEEN, AND HOW THEY PLEASED.

I suppose you are anxious to learn how the bees are getting along which you shipped to me July 7. Well, the little fellows came all right, Wed., the 8th, at night. We got them Thursday morning, and had them in one of your hives by ten o'clock. They had a good fly, and went right to work. Yesterday they looked as though they were swarming, there were so many young bees flying. I feel as if I must thank you for your promptness, and for the nice way in which you sent them. Last fall I had eleven swarms, and I lost every one. I should have sent to you before July for them, but I was so discouraged. I at last obtained one swarm, from which I have another; and with one from you now makes me three. I shall now use your hives, and next fall put them into the chaff hives, and I hope to succeed better with them. I feel I can not give them up entirely yet, for I do love them so, and I love to watch them and study them; and I hope, with God's help, to realize something from them yet.

JULIA M. FREEMAN.

Perry, N. Y., July 12, 1885.

UNTESTED ITALIAN QUEENS,

Raised from imported and best home-bred queens, 90c each; six for \$5.00. Tested, \$1.50 each. Three L. frame nucleus and queen, \$3.00.

14d F. S. McLELLAND, NEW BRIGHTON, BEAVER CO., PA.



Vol. XIII.

JULY 15, 1885.

No. 14.

TERMS \$1.00 PER ANNUM, IN ADVANCE. 2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00. 10 or more, 75 cts. each. Single Number, 10 cts. Additions to clubs may be made at club rates. Above are all to be sent to ONE POSTOFFICE.

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● CELLARS VS. CHAFF PACKING.

CELLAR WINTERING, CHAFF PACKING, ETC.

LIVING about six miles from here is an old man who has no bee-book, and reads no bee-paper, but who has for the past eight years successfully wintered his bees in an apartment of his cellar. He buys his hives of bee-keepers who have given up the business in disgust, never paying more than twenty-five cents apiece for them. He has never raised very much honey for sale, very seldom opens a hive, but sells bees in the spring to bee-keepers who are good hands at raising honey, but poor ones at wintering their bees. We visited him a few weeks ago, stayed to dinner, had a good long chat, and bought five colonies of bees. In one corner of his cellar is a room about ten feet square. The floor is cement, the walls and ceiling are plastered. It has two outside windows, which are closed and protected in the winter. Upon the approach of cold weather he carries his bees into the cellar, and simply stacks the hives up as we would so many boxes. He takes them out again "when the snow is gone." He has never lost a colony, except some late swarms that starved. He has tried once or twice leaving one or two colonies out of doors, but has lost them every time. We noticed that the fronts of some of the hives were considerably soiled, and asked if they were in that condition when he bought them.

"Oh, no!" said he; "almost all of them get that way in the winter. They look pretty bad when we bring them out, but the rain soon washes it off. Whenever we go into the room in the winter we find bees out running around upon the front of the hives; they empty themselves, and go back into the hives."

We asked him how warm he kept the room, but he "didn't know." He knew it never froze in the cellar. Whenever we find a hive daubed up like this in the cellar, we mentally write "dead" upon its side. We have known of this man's success for some time, and have attributed it to locality. To test it we have often thought of taking a load of bees over there the latter part of the summer, and getting him to put them into the cellar upon the approach of winter. Last fall a son-in-law of his brought eight colonies there—brought them after cold weather had set in, and put them into the cellar without even giving them a flight, and last spring came and carted them home again, alive and all O. K. All this was rather "upsetting;" but there was no dodging it, *because they had the bees to show*. So much for cellar wintering. Now let us talk of

CHAFF PACKING.

"There is no great loss without some small gain;" if we lose our bees every winter we have the pleasure in the spring of a trip to the home and apiary of Cyula Linswik and her sister. Last spring was no exception, as we again brought home in triumph thirty-one of their best colonies. Although their bees are what would be called light Italians, we have no hesitation in saying that, taking every thing into consideration, they are as good Italians as we have ever had. They are very peaceable, but also very energetic workers. In accordance with our request, one colony had been left packed so that we could see "just how it was done." The hive stood upon a board platform, about three feet square, said platform being raised three or four inches from the ground. A box nearly as large as this platform, but without top or bottom, was set down over the hive, the top reaching four or five

inches above the top of the hive when its cap is removed. A bridge, or tube, about four inches square, led in from the front of the box to the entrance of the hive. When preparing the bees for winter, one comb is removed and the remaining combs spread apart. Little sticks laid across the tops of the frames allow the bees to pass from comb to comb. Over these sticks is laid a woolen cloth, and in the surplus apartments at the sides of the brood-nest are placed chaff cushions.

The large box is filled with chaff, and a cover put on, in the center of which there is a hole a trifle larger than the top of the hive. The ordinary cap to the hive is removed, and another cap substituted that just fills the hole left in the cover to the large box, and sets down over or outside the upper edge of the hive. This cap is filled with chaff, the chaff being kept in place by a cloth tacked to the lower edge of the cap. In the top of the cap is cut a hole nearly a foot square, which is covered with wire cloth to keep out mice. This opening allows the moisture to escape, which is considered of much importance. In one or two instances this upward ventilation was omitted when the entrances became closed with ice. Over the whole is placed a roof of rough boards. The packing is done *early*, so that there need be no disturbance after cool weather sets in. When it is time for snows to come, a board is leaned up in front of the entrance, to keep out the snow. The little bridge leading to the entrance is not allowed to become filled with snow. If any snow blows in it is *very carefully* brushed out with a wing. The packing is allowed to remain until all danger of even cool weather is past. It was May 18th when we were there, and the unpacking had been finished the previous day. We were never more favorably impressed with the importance of *spring* packing. In the colony that was packed great masses of bees were hanging out in the surplus apartments at the sides of the brood-nest; while other colonies that were unpacked, that were, we were informed, no stronger, showed little if any disposition to hang out. The hand thrust down into the chaff outside of the hive showed it to be *quite* warm. Even though inclined to adopt cellar wintering, we think it will be found profitable to pack the bees in the spring, after taking them from the cellar. The fine, strong, booming colonies found at "Our Clearing" have stimulated our ambition wonderfully to winter our bees in a like successful manner, and, feeling that "what man hath done man can do," we shall put forth extra exertions to winter our bees another winter. Now don't joke us, friend Root, and say it was a *woman* who has so successfully wintered her bees. If you do, we shall tell you that Dr. Southard, of Kalamazoo, Mich., wintered his entire apiary of 100 colonies, and they were packed out of doors. Cyula and her sister jokingly offered to winter some of our bees if we would send them up there, and we are more than half inclined to send half a dozen colonies, just for the fun of the thing, and to see how it will turn out. It is, perhaps, but fair to say that two or three colonies in the "Linswik Apiary" did not winter so perfectly as the others, and were considerably weaker, and that the proprietors could not tell the reason why.

A FEW WORDS IN DEFENSE OF G. W. GATES.

Mr. Gates may not feel like defending himself, so please allow me to say that I know one of his little boys was very sick, and that Mrs. G., who usually

helped Mr. G. in packing bees for shipment, had to stay in the house and care for the sick child. Then Mr. Gates' man caught his hand in a horse power, and he was left short of help. Bees were swarming, every thing full of honey, and no time to extract; queens hatching, and tearing down cells because they could not be attended to. Then another child was taken sick, and friend G. certainly had his hands full. All this time orders were fairly *pouring* in. Had Mrs. Chaddock known all this, probably she would have been more charitable. It was of friend Gates that I bought the bees by the pound, as mentioned in the July GLEANINGS, and I have found him the very soul of honor.

S.—W. Z. HUTCHINSON, 75—100.

Rogersville, Mich., July 8, 1885.

SPIDERS AND BEES.

Spiders are one of the Bee-Keepers' best friends to preserve empty Combs from the Ravages of the Bee-Moth.

BY REV. L. L. LANGSTROTH.

NEVER, since the introduction of movable frames, has there been in our country a greater mortality among bees than during the last winter and spring. Before the use of these frames, to most bee-keepers such losses were irreparable. How often, by natural swarming, did the old-fashioned bee-keeper, when a few good seasons came in succession, make such a success in the business as convinced him that a given sum of money invested in bees paid better than any thing else? But sooner or later comes the bad year—when most and perhaps all of his colonies are lost—his golden dreams vanish, and in most cases he abandons the pursuit in disgust, having nothing to show for his investment but some empty hives (extra nice for kindling-wood), and some combs, of value only for their wax. Was he one of the kind who have little use in their vocabulary for the word failure? Being able to make but little if any use of his old combs, he painfully waited upon the seasons; and unless he had in him the making of another Quinby or Grimm, he could hope to build up his apiary again only if favored by a succession of favored seasons.

We have had some very calamitous seasons since movable frames began to be extensively used; but by those who know their business, how quickly are such losses repaired! Although not very often referred to, this power of speedy recuperation is one of the greatest benefits which come from the control of the combs. Nearly every empty comb can be utilized for the bees, especially since the era of sending queens by mail and purchasing bees by the pound; and even if he has lost all his colonies, no one need call himself a bankrupt bee-keeper, but in a single favorable season may hear again the cheerful hum of industry in hives no longer desolate and silent. The change so speedily effected seems almost like a resurrection of the dead!

But it takes *time*, even with the best management, to secure such results, and just here comes a new element which *must* be taken into account. Nothing is so acceptable to the bee-moth as combs with no bees to protect them; the older the combs, and the better in all respects for the bees, the better, too, for the moth; and the great question is, how with the least trouble can these empty combs be

saved? Hang them up in some light and dry place, carefully separated so that they nowhere touch each other, and sulphur them from time to time. Most of you know by heart this old, old story, and many of you only to neglect what requires so much care, and time never waits upon any procrastinator. You need not be told that eternal vigilance is the price which *must* be paid if we would save empty combs for the bees.

Columella said, nearly two thousand years ago: "This business [bee-keeping] demands *maximam fidelitatem* [the greatest fidelity], which, since it is the rarest of qualities," etc. It is just as hard to find it now as then, but we never needed it more, and I proceed to tell those who are conscious that they are weak in this matter, how "without money and without price" they may secure it. The facts which I shall now give are recorded in my private journal, and have been often told to bee keepers, some of whom will, no doubt, remember them as given by me many years ago. Within a year or two my methods have been given in part to bee-keepers by some German apiarist—and how much do we owe to our German friends, among whom Dzierzon stands first!

I extract now, word for word, from my Journal, Vol. I., under date of July 8, 1864:

"*Spiders* I count as friends. Last season I put away small frames of comb under a box, and the spiders kept them free from moths: this year I had a number of hives with combs, but no bees, and they have guarded them *well*! Where a spider has her web, there it will be safe to keep empty combs."

I will now explain more fully how I came to find the spider's value to the bee-keeper. A nucleus with a choice imported Italian queen was placed on an empty box hive laid on its side upon the ground, with its cavity facing the north, to protect its contents from the sun. In this cavity I put quite a number of frames with choice combs to be given from time to time to the nucleus, when frames of brood for queen-rearing were taken from it. I expected that some, at least, of these combs would be visited by the bee-moth; but examining each comb as I took it from the old box, I found no signs that they had hurt them. This surprised me much, until I saw, when I came to the further end of the box, a *spider's web* with its occupant, and many proofs of the kind of work that had been done (all unknown to me) in the shape of skeletons of bee-moth and other insects suspended in that web.

It was not until next year that I reaped any great benefit from seeing the handiwork of this spider. Dec. 30, 1863, the weather at Oxford, Ohio, was quite mild for a winter day, the mercury ranging at about 42°, the day being misty and threatening rain. At 5:30 p. m. my thermometer was 42°. The wind began to rise, and at 6:30 p. m., the record was 32°; 7:30 p. m., 22°; 10:30 p. m., 8°. Jan. 1, 1864, 7 a. m., 16° below zero, with a gale of wind. What soldier who camped out that day will ever forget it? In our apiary were many weak colonies, wintered only because we could then sell every tested queen we could spare in the spring for from \$10 to \$20. Nearly every one of these weak colonies was dead when I examined them after nearly two weeks of unusually cold weather. The hives with their empty combs were piled up against the north side of the barn, and shut up only enough to exclude mice. It was quite late in the spring before my health allowed me to give them any attention, and my son was absent in the army. But I was able to use

every comb in my various operations. The spiders had taken possession of them, and the bee-moth had no chance. Had I closed the hives so tightly that the moth could not have got in them, I should in all probability have lost most of the empty combs. The odor of such hives attracts the moth; and if she can not enter them she will lay her eggs in the most convenient cracks and crevices for her progeny to get access to their proper food. It is much easier for a spider to entrap the moth than it is for her to catch her larvæ when once they have burrowed into the combs. I prefer, therefore, to give the moth the freest possible admission, consistent with excluding mice, to all hives with empty combs.

Solomon says: "The spider taketh hold with her hands, and is in kings' palaces." And she is very fond of making her hunting grounds in the combs of our queens' palaces when no longer under the protection of the bees! But we need trust nothing, even to her alacrity, to *volunteer* in our service. In our barns and woodsheds can always be found in autumn and early spring a supply of those white bags in which the provident mother so nicely tucks up, as in the softest silken cradles, her eggs to be developed in due time by the increasing warmth of the season. Put a single one of these so-called "spider bags" into each hive with empty combs, and be no more anxious about them—you have got "without money and without price" that vigilant fidelity so indispensable in this matter. The spider is now your very good friend. She mounts guard over your combs, and will protect them from the moth until the last one has found its proper place with your bees.

I regret that this information was not given long ago to the bee-keeping world. It was intended to appear years ago in the revision which I hoped to make of my work on the "Hive and Honey-Bee." I specially regret that I could not give it last spring when it would have been of so much greater service. But it is only within a very short time that I have recovered sufficiently from my old head trouble to take any interest in bees, or to write on any thing connected with them. With gratitude to our heavenly Father, "who forgiveth all our iniquities and healeth all our diseases," and with hearty good will to all bee-keepers at home and abroad, I sign myself their friend.

Oxford, Ohio, July 1, 1885. L. L. LANGSTROTH.

N. B.—July 7, 1885. I have just taken from a loft over my woodshed some old combs of the kind that the moth loves, and that have lain there in an open nucleus box since 1874! They have not been molested, and the spider-webs adhering to them tell in short the whole of this long story. L. L. L.

Friend L., the suggestion you make is new to me. I have often seen combs covered with spider-webs, but it did not occur to me, until I had read the above, that such combs are usually found free from the moth. In fact, after thinking the matter over I remember to have seen many times the combs entirely free from moth, but I never knew just how it was before. Now, this is quite an item, and I don't know but quite an invention, if any thing can be called an invention that was not invented, or that invented itself. But for all that, I have been so much accustomed to regarding spider-webs as an indication of slovenly habits, that I feel al-

most as though I would as soon have my combs destroyed by moth as to be covered with spider-webs. This would not be a very rational conclusion, however, after all, for a brush-broom would remove the spider-webs in a moment, and ungainly holes in the combs by moths can not well be remedied. Is it true, that any sort of spider is a protection in this way, and that these spiders' cocoons we find would, any of them, do the business? Very likely it is; but the matter is all entirely new to me, and doubtless we shall be able to take advantage of it.—I have often thought of it, friend L., even if I have not talked much about it, and it is wonderful how bee-keepers build up after disastrous losses; for, in fact, if a bee-keeper has every thing else in good trim, even if his bees are all dead he is not so very badly off. For a small amount, comparatively, expended in buying bees in the fore part of the season may put him almost where he was, before the close of basswood bloom.

THE MANGROVE HONEY OF FLORIDA.

ALSO SOMETHING ABOUT THE "STAYING" QUALITIES OF THE CELEBRATED CALIFORNIA HONEY, COMPARED WITH WHITE CLOVER, ETC.

IN my late article on Florida, page 450, in the last line on the page is an omission, either of my own or of the type-setter. The sentence should read, "The Florida yellow pine makes excellent lumber for hives, but is quite heavy, and for that reason, etc."

You ask about the staying qualities of mangrove honey, as compared with California sage honey. While the color, body, and peculiar aromatic flavor of the sage honey is undoubtedly very fine, a single glance at the market reports will show that it lacks much of standing as high in general estimation as it did when first introduced. For the past few months, at least, California honey has invariably been quoted in our leading markets at from one to four cents less per pound than white-clover honey. Our good friend Mr. Muth told me, some four or five years ago, that he at one time made a determined, persistent effort to introduce California honey to his trade, but utterly failed, his customers preferring clover honey, even at a higher price. He has also handled the Florida honey more largely than any other dealer, during the past three or four years; and if you could secure a statement from him as to its quality, you would very much oblige myself as well as others who are interested in this matter.

This honey has been on our markets only a short time, and in very limited quantities at that; and the fact is, that none of us, unless it may be Mr. Muth, knows any thing about its staying qualities compared with our Northern honey.

I think the rule is, that none of our higher-flavored kinds of honey, such as basswood, California sage, etc., is as generally liked as is the more mild-flavored kinds. If I am correct in this opinion, then mangrove honey will probably prove valuable for its staying qualities, as it is of an exceptionally mild flavor, as stated in my first article. For my own eating, I prefer it to white-clover honey; but the likes or dislikes of one person prove little.

We have a little home down there at Hawk's

Park; and when we get to living there, as we hope to some time, just step in some morning and test our honey for yourself; and perhaps, if we happen to be a little extra generous at the time, we may allow you to sample an orange or two also.

O. O. POPPLETON.

Williamstown, Iowa, July 10, 1885.

MRS. CHADDOCK TALKS TO US ABOUT MARKET GARDENING AND BEES.

SHE ALSO HAS SOMETHING TO SAY IN REGARD TO PROMPTNESS AND ACCURACY IN BUSINESS.

EVERY time that you print an article of mine, and then put one of those inimitable foot-notes after it, I feel as if I wanted to "answer back."

I do not have the least doubt but that Mr. Gates is a good man. I was not anxious to get the money back; but I was suffering for some bees—or, rather, the combs were getting moths in them, and I was nervously anxious to put some bees on them, and I wanted him to send me some "right away;" and if he could not do it, then I wanted him to say so *instantly*, so that I could send somewhere else. I beg Mr. Gates' pardon if I have done him an injury. In fact, I supposed that if Mr. Gates was all right you would put my communication in the waste-basket.

You say that you suppose I have built up a large business in the market-gardening trade. I have not. In fact, I do not do any thing in the business, worth mentioning. Why? When I began raising vegetables for market we had just bought this farm, and had gone in debt for it. We paid \$8000 for it, and all but thirteen hundred dollars was borrowed money. We had no way of making money but by farming. I was young and ambitious, and I thought I could help along by raising things to sell. Mr. Chaddock was never willing for me to do it. He was willing for me to bind rye all day, or husk corn day after day for weeks, but he thought peddling produce was "small business." He said we lived too far from market (and we do), and that he could not spare the horses in the working season. His arguments were all good, and I felt the weight of them; but we were so scarce of clothes and dishes, and every thing, that I begged him to let me try it. At that time the Rockford & Rock Island Railroad was being built through Vermont, and the influx of the railroad hands made a good time for the taverns and boarding-houses, and that meant a good time for the produce-raiser. After the railroad was built, and the hands left, there was not so good a market; and as we had reduced our indebtedness from near seven thousand to three thousand, and were paying seven per cent interest, instead of ten, I got inflated, and felt above the peddling business. About that time I began keeping bees, and writing for pay, and I thought I had too much to do. Last year I was sick; I never touched a hoe the season through, and we never had a whole mess of lima beans, nor a single green bean to eat, the whole season.

When Mrs. L. Harrison visited us in August, she was very much worried because there was nothing to sell. We took her to Vermont to the train; and before we left her we bought a watermelon. After she went home she wrote me, "I can not help thinking of that buggy going to town with nothing under the seat to buy the 'gude mon' a watermelon." I

answered her, that if I were able I would go right to cutting cordwood, so as to be sure to have something to sell the next time she came to see me. I expect her to visit me again this fall, and all this spring I have been planning to give her pleasure. I have planted a lot of squashes; and when we go out riding next time, I intend to take out the buggy seats and pile the bed full of big squashes; and when we go to get in I will invite her to a seat on a mammoth squash, and, seating myself on another, we will ride gaily along. Mrs. H.'s head is level, and so is her heart, and I like to joke with her.

Now as you do not seem to like compliments very well, I will give you a taste of the wormwood; and I say at the start, that I don't want any more bees in the place of them, or to make it right; for it is all right now; that is, all but the *remainder* of it. I *reconsider* why the half-pound packages of bees that I got of you do not build up like those that Bro. Phillips got of Dixon & Dillon, of Parish, Ill. I got mine first, and I put a comb full of brood (in all stages) in each of mine. One of them now has two full frames, and a little in two more; the other has three full ones, and two partly filled, while Bro. Phillips' are rushing and roaring, and in need of the section boxes. He put his on empty combs where the bees died, and they ate sour honey, too, but he did not give them any brood; they had to do it all. It can not be in the management, for I helped him, and I did just as I did with my own, with the exception of the brood given to mine.

MORE SLOWNESS.

When my combs were standing empty so long, I went to a neighbor's, and told them I wanted to buy a swarm of bees, and would give two dollars for one, put into my hive. There was no one at home but a young woman of sixteen. She promised to ask her father if I could have them, and send word to school by her sister, who would tell Jessie, and she would tell me. Every day for ten days I asked for news of those bees. Then I borrowed two dollars and sent for two pounds of German brown bees, and the very next day this neighbor's family "roused itself," and the mother came over to tell me that I could have as many swarms as I wanted, and they would take strawberries for pay. There it was; they had more bees than they wanted, and I had more strawberries than I wanted, but the girl "forgot to tell her pa" until I had sent my two dollars away, and then they had to pay the money for the berries. Now, I do not believe that one of my children would "forget" to tell me, if any one wanted to buy any thing of me; even little Harry has more business principle than that.

Vermont, Ill.

MAHALA B. CHADDOCK.

Mrs. C., I am very glad of the turn your letter has taken, because it helps to solve this great problem of what to do—a problem that is so intensely interesting to those who have farms with mortgages on them, just as you and your good man had when you started. And now when bee-keeping seems a little dull, and the price of honey low, many bee-keepers are wanting to know what else they can do. They all have ground, more or less of it; and if they have learned to sell and produce honey, they will very quickly learn how to produce garden stuff. I did not really suppose that you had built up a big business, but I knew you would have done so, if you had kept on. In trying to

find something for our boys and girls to do here, we have done a little something at this kind of work; but it is not much use to try, unless you can find boys and girls who love plants, and who love to work with them. On a single bit of earth, covered by a glass sash 3 by 6 feet, we have this season produced vegetables that would have sold for a couple of dollars or more, had we been inclined to sell them; and on a piece of ground, perhaps not more than 15 feet square, we have, without the aid of any sash, raised and sold over ten dollars' worth of cabbage-plants. The only expense put on the ground was perhaps 50 cents' worth of stable manure, and may be one day's work, all together. Our cabbage-plants, celery-plants, and plants of every kind, in fact, have all been sold at good prices, and we could have sold a good many more.—In regard to the wormwood, by all means give it to us when we need it, and it will likely do us good; but I do not quite get at the point, why our half-pound packages of bees do not build up like those you got from Dixon & Dillon. Do they give bigger half-pounds? or are their bees younger and smarter? or did it just happen so? I have observed this, that some half-pounds of bees with a queen will often go away ahead of some other half-pounds with a queen; but I have never seen a case where I had not good reason to believe a frame of brood was a very great help.—Your experience with little girls is just about what I should have expected of the average little girl. And it is not the little girls only; but that little girls and little boys, both of them, grow up big and stay just that way. It does vex me beyond any thing I can think of, to intrust some important commission to some persons, and when they discover they have caused much trouble and much loss of property by their forgetfulness, to have them say nothing, and go on without even thinking to make any sort of an apology. When anybody has wronged me by accident or heedlessness, if he will show his regret by a real genuine apology, and offer to take out his pocket-book and make good the damage, why, of course, I always feel like letting it pass, and calling it square. But I do like to see people wake up once in a while, and show that they have some regard or care for what is going on in this world of ours.—So you still raise strawberries, Mrs. C., even if you have let the garden "sass" go.

THE OHIO STATE BEE-KEEPERS' ASSOCIATION.

SOMETHING IN REGARD TO THE MATTER.

I WANT to make an apology to our Ohio brethren; but before doing so I will give place to the following kind letter:

Friend Root:

You will see that you are not forgotten, even if you were not present at our convention, as they have elected you president of the Ohio State Bee-Keepers' Association. They suspended the rules, and elected you by acclamation unanimously, which I hope you will accept as cheerfully as it was tendered you. J. T. Martin, of Tiffin, was

elected vice-president, and your humble servant treasurer and secretary. C. M. KINGSBURY.

Mt. Vernon, Ohio, Feb. 18, 1885.

You will notice, that in the above letter no mention is made of the time when this association meets again, and I have been "waiting and watching" ever since I got back from New Orleans, for something in regard to the matter. As the convention usually meets at the time of the Ohio State Fair, I presume there will be such a meeting this year; but I am ashamed to confess, that at present I have not been able to find out when or where I am expected to officiate as president; however, I will take immediate steps to find out, and will try to be on hand, and do all in my power to make the convention a success. It has sometimes been quite hard for me to do much mental work unless I do it an hour or so at a time, with a good many recesses thrown in. On this account I have to depend a good deal upon our good friend Martin, vice-president, and friend Kingsbury, who writes the above kind letter. Ernest will go with me as private secretary, and perhaps he can help some.

RECENT DEVELOPMENTS,

And Suggestions and Queries Particularly Pertaining to the Season.

CARNIOLAN BEES.

WILL you please tell us in the next issue of GLEANINGS what your experience has been with the Carniolan bees, and does it agree with friend Benton's? Ask those that have tried them to report. We are greatly interested in them, and wish to know more.

Mt. Vernon, Ill.

W. W. ADDISON.

Friend A., we have never yet seen a Carniolan bee. We told Benton nearly a year ago to send us a couple at once. He wrote that it was too late in the season, but that they would come early this spring. They have not yet come, and he has not as yet given any explanation, yet we notice he has been sending them to others. I wonder if he is afraid to have them subjected to the test and scrutiny they will likely meet with at the "Home of the Honey-Bees."

A REPORT FROM THE ALLEY DRONE-EXCLUDER.

In using the Alley drone-excluder I find that the drones thus excluded sometimes go to other hives. In using the drone-trap, several young queens going out for mating could not or would not pass through the zinc, but passed up the cone and there remained until liberated by drawing the slide. On returning they could not get in till the trap was removed.

D. F. SAVAGE.

Casky, Ky., June 30, 1885.

MRS. COTTON.

Friend Root:—For years it has been apparent that Mrs. Cotton, of West Gorham, Maine, has been imposing upon the public, and the matter has been referred to the Maine Association, and we wish to obtain what information we can in regard to the matter. Will you please give me what information you have in your possession? Do not refer me to GLEANINGS, for I have cut out and sent to publish-

ers of papers, in order to stop her frauds, all or nearly all that has appeared, and so I have not the complaints on hand now. Should you think it just and right to do so, I would ask that you request, through GLEANINGS, that all who have for the last ten years been defrauded by Mrs. Cotton send a plain short statement of it to JAMES B. MASON, Mechanic Falls, Maine, President of Maine Bee-Keepers' Association.

DRY FECES.

I notice in GLEANINGS for June 1st that Professor Cook would confine the controversy on dry feces to the droppings found on the bottom-board. The defenders of that theory do not purpose being so limited. Dry feces we understand to be such as have so small a percentage of moisture as to retain their form, no matter when or where voided. While some such may be found in the debris underneath the cluster, the far greater part will be voided after the bees are set out. We are glad to learn, through the *Canadian Bee-Journal*, that S. Corneil, who has no superior in America as a scientific writer on apiculture, has commenced the investigation of this subject. When he gets through we shall have something that all can depend upon. P. H. ELWOOD.

Starkville, N. Y., June 24, 1885.

DRONES FROM WORKER EGGS, ONCE MORE.

I wrote you last year that I believed drones could be had any time the queen was laying. I have demonstrated the fact, and several others that I told of it. Take the queen out and I guarantee drones. Sometimes only two or three will be raised. If no drone comb is in or near the brood-nest, they will build out worker-cells, and raise them there. Mr. Hofensteter, of Louisville, deserves more credit for the discovery than myself. He put me on the track of it by saying on a card to me that the queen laid all one kind of eggs. I am confident he was right, but I stick to the theory that the bees feed the queen something besides honey to bring her into laying condition. If she lives on honey only it looks reasonable that her condition would always be the same. M. L. WILLIAMS.

Maysville, Ky.

REPORTS ENCOURAGING.

WE are having a good honey season so far. The yield from apple-blossom was the best I ever knew. The bees filled up the brood-combs so that I had to extract to give the queen room to lay. I took about 100 lbs. of extracted honey from eight or ten stocks, besides a little comb honey, all from apple-blossom.

Naugatuck, Ct., July 2, 1885.

R. DOWNS.

Bees are doing splendidly on alsike clover, and swarming furiously, with basswood about two weeks ahead. Our bees have never been in so fine condition at this season since 1880.

Wyoming, N. Y.

G. W. STANLEY & BRO.

I have 140 colonies of bees; wintered all right; doing pretty well now.

FRANK GENTRY.

Riverton, Miss., June 8, 1885.

My bees are doing nicely. I have 28 in Simplicity hives, 12 in Langstroth hives, and 47 in cross-sticks. I sold 1200 lbs. of comb honey last year.

W. S. FESSENDEN.

Kerrville, Texas, June 12, 1885.

THE BEES AND SHEEP CONTROVERSY.

FRIEND MILLER ALSO HAS HIS SAY IN REGARD TO THE CONTENTS OF GLEANINGS.

A BONA-FIDE suit has been commenced against a Wisconsin bee-keeper, Mr. S. I. Freeborn, by an owner of sheep, on the ground that the visits of the bees to the pasture ground are detrimental to the sheep. If I am not mistaken, there has been some loss of life among the sheep, and they have not been doing well, and for this damage the bee-keeper is expected to pay. It hardly seems possible that any one could be so absurdly unreasonable, in this enlightened age, as to really commence suit on such grounds, for there is no danger of any harm to the sheep from bees, and the bees working on the clover-blossoms will insure a better crop of clover for the future. Furthermore, if a neighbor of mine were sure that bees on his pasture were killing his sheep, how could he prove they were *my* bees? I doubt if I could identify a single bee as my property, if it were working half a mile or even half a rod from the apiary. However we may laugh at the thing as unreasonable, the course of the law is so uncertain that it would not be beyond the range of possibilities for Mr. Freeborn to find the suit go against him, in which case a precedent would be established by which any bee-keeper might find himself subject to blackmail levied upon him by the owner of any flock of sheep within three miles of his apiary. A plan has been started in the *A. B. J.* for a "National Union," for defense in such cases. Either this or some other plan should be adopted, for we are all interested, and I doubt not there will be enough to help bear the expense so that Mr. Freeborn can afford to continue the suit to a rightful issue.

WHAT GLEANINGS SHOULD CONTAIN.

As the subject seems more or less under discussion, I suppose I have the right to say. I can not at all agree with the editor, that by putting the motto on the title-page, "Peace on earth," etc., he thereby acquires the right to fill the pages of GLEANINGS with matter at all different from what it should be without the motto. If my grocer had this motto over his door, and should send me a dollar's worth of prayer-books when I sent for sugar, I should not like it. The motto is a good one, but does not give the right to talk about potatoes and strawberries; and if that right exists it must be on other grounds. The matter looks to me like this: There was something like a contract, that the publisher of GLEANINGS was to furnish me so much reading-matter about bee-keeping. In the course of time some of the space was taken up with religious matter; and although I believe in religion most heartily, I thought this a violation of the contract, and thought I had the right to enter a protest. Then extra pages were added, so that there was no deduction from the space for bee-lore, and, of course, I could make no objection. Gradually other matters were introduced—potatoes, carp, strawberries, etc.; but as the pages were increased in number many times more than enough to occupy the extraneous matter, I received more instead of less bee-literature, consequently I had no right to complain. Bro. Hutchinson, isn't that about the way the matter stands? Don't you get all you bargained for, with the extra matter thrown in? New subscribers certainly can not complain, for they knew be-

forehand what they are to have—a journal filled in the main with bee-matters; the editor, however, reserving the right to switch off upon any topic that he thinks interesting or useful; and if they do not like the dish, they are under no compulsion to buy and pay for it. Of course, we all know better than the editor just how to run matters, and any of us could edit a better paper; but on the whole I should sorely miss the visit of GLEANINGS every other week; and if one little matter can be remedied, I will consent not to ruin Mr. Root's business by ordering my paper stopped. I allude to having matters mixed up so that I must read articles that I do not care for all through, for fear I may miss some information about bees. If I send for five pounds of rice, and my grocer sends me also a quarter of a pound of mustard seed without charging for the latter, I thank him for it; but if he mixes it all up with the rice, the trouble of picking out makes it worth less than if I got the rice alone. If I am very busy, and about to start out to put on supers, and GLEANINGS comes, I want to sit right down and read it through before I put on the supers, in hopes to find a better way. But I don't want to take time just then, however much I might like it when at leisure, to read how a correspondent manages to school children or plant strawberries. Now, Mr. Editor, I am not at all exacting; you needn't change the numbers of GLEANINGS you send to the others at all; but please print separately the one you send me, and label one department, "This is nice reading, but there isn't a word about bees in it." If you will do this, I will continue to pay the high price I have been paying, and not stop my paper.

MATTHEW, 2 III.

C. C. MILLER, 179.

Friend M., you make a good point on the bees and sheep controversy. At the time I had the trouble with the cider-mill man, there was talk of prosecution. "But," said I, "my friend, if you commence the suit against me you will also have to commence one against all other bee-keepers within range;" and I convinced him by showing him bees flying in other directions as well as toward my apiary. At other times, when the bees meddled with the preserving and canning business, and the men talked of recompense for their losses, I suggested that every man who kept bees should pay his proportion of the losses. They, however, urged that, as I kept by far the largest number, I ought to pay the greater part of the damages; and may be our friend Freeborn, of Wisconsin, keeps more bees than anybody else in that vicinity.—In regard to having things mixed up in GLEANINGS, I believe we use more small-capital headings than any other journal published, in order to enable our friends to find out what a paragraph is about before they read it; and if GLEANINGS were divided we should have to divide the articles almost into sentences; and a part of your own communication, friend M., would have to go into one department and part in another. In regard to printing a different one for you, I am *really* afraid you will have to wait until we get ahead with our work a little. Then another thing: Some of your neighbors might see it and then *they* would want one printed "expressly to order" too. We have already got the children fenced off in a place by themselves;

but I am expecting every day as they grow bigger some of them will get out and be found around among the old folks; and then if one of the old folks should get in among the children, what trouble they would make! Never mind; we are going to keep trying.

REVERSIBLE FRAMES.

FRIEND HEDDON'S REPORT AFTER USING THEM A SECOND SEASON.

IN response to your request for reports regarding "reversible frames," I will say that we now have about 350 colonies in two apiaries, with an average of about 14 frames per colony, as most of them have two sets of eight each. Something over half of these 5000 frames are our style of reversible frames, which have been described, and I believe illustrated, in GLEANINGS, within the last year.

I have to report not only practical success in their manipulation (the second year of their use), not only as far as gluing, etc., is concerned, but the generally conceived advantages of reversing are more than realized. The comfort of frames solid full of comb, and that comb nearly solid full of brood, is pleasing to the eye of the apiarist. I find the three-fourths space between the lower half of the end of the frame and the hive a great advantage. A few hives that were overlooked, and became clogged with honey, crowding out the queen, had to have their brood-combs extracted. Before replacing them with the bees we reversed them, giving plenty of surplus room above, and this reversing prevented any further clogging of the brood-frames. I am pleased beyond expectation, and never expect to use else but reversible frames for either comb or extracted honey production. We are practicing

MODERN TRANSFERRING

with over 50 colonies, and it seems like changing the railroad train for the ox-cart, to think of going back to the old method of transferring bees.

OUR METHOD OF PREVENTING AFTER-SWARMS, as given on page 414, is working perfectly in several places in our yard. I do not remember of a single failure in my experience.

Before closing, I wish to say a word in regard to our

HONEY MARKETS.

There will be many locations throughout our United States, where not nearly enough honey will be produced to supply the local demand. Many of those who have become discouraged, and given up, will (now that the wintering problem is under control), soon go to bee-keeping again. It will be a fatal mistake to allow the taste for honey to die out in their locality. They should see to it that the supply is equal to the demand, by purchasing honey at wholesale and retailing it at such prices as will pay them for the trouble, and can be afforded by the consumer. This is more particularly an important matter with extracted honey. It is not only important for the individual, but for the whole fraternity. Keep your market always well supplied.

JAMES HEDDON.

Dowagiac, Mich., July 6, 1885.

I am very glad indeed to hear that you still like reversible frames.—In regard to "modern transferring," I suppose many of the readers, like myself, have forgotten just

what you mean by this term. Will you please briefly describe it again, or refer us to where your former description may be found? If I recollect aright, it is in using frames filled with foundation mainly, in place of the old irregular combs to be found in most box hives.—I would emphasize most strongly your concluding remarks. Every bee-keeper should let it be known that honey can always be had by going to his residence; and let packages of all sizes from half a pound up be always in readiness to pick up and take off at a moment's notice. There is a steady demand for good honey, and the demand is not very likely to decrease, providing the honey can always be found by going after it.

REPORT FROM ARKANSAS.

MAKING A BUZZ-SAW TABLE OUT OF A GIN-STAND.

AS no reports have appeared in GLEANINGS from this portion of the State, here are a few jottings. Bees wintered well. I do not know of a single stock that has died. My bees at fruit-blooming had from 10 to 25 lbs. of honey. I transferred five stocks at the beginning of fruit-bloom, and was compelled to take most of their honey, on account of weight. We had nearly one week of fine weather at this time, and bees did finely; but cool cloudy weather set in, so they could do but little, and lasted until fruit-bloom was gone.

Our next show was blackberries, and I am not quite sure that they got any honey from this; but the weather still stayed cool up to the last three days. I fed all I was able to, and yet my bees that were transferred are still short of stores, as well as my new swarms, of which I have had three more than any one that I know of in this part of the country.

Our next show is persimmon. It will soon be in bloom. It yields more and better honey than any thing in this country. Then comes in horsemint, goldenrod, sumac, all of which yield honey. Then comes in the Spanish needle and partridge pea. I forgot to say, that we have but little white clover, and its blooming is over. I have not seen a bee on a head this spring. Our prospects are indeed gloomy—more so to one like me who has put his all into the business. Bad health induced me to hurry up my inclination to go into the business. I heard from friend W. D. Scott one week ago. He is an enterprising apiarist of this county, but his bees are doing badly for want of forage. We have several men in this county who are extensively engaged in the business; to wit, Scott, Clinton, Blackwell, Thomson, Potillar, Pledges, and others; but with what success, I do not know.

I would say to my Southern friends who contemplate going into hive-making, if you can get a Carver gin-stand, you have a saw-table made. Remove the saws from the shaft, leave the pulley on one end and the band wheel (that runs the brush) on the other; you will find a casting on the shaft inside of saws that you can easily build a band wheel on; bolt your cross-framing to cross-beam of stand for your saws, and you have one of the best saw-tables for horse or steam power in market. You have two band wheels on one shaft—one for cut off, and the other for rip. I advanced my cut

off 2 feet from rip, so I can cut the widest board without touching the rip. I have one in my shop that I have made 30 Simplicity 8-frame hives from this spring, with frames and separators and section boxes, and I would not exchange it for the best table in market.

5—E. SUGG, 10—13.

Box Spring, +o Yell Co., Ark., May 25, 1885.

Friend S., we thank you for your suggestion in regard to extemporizing a buzz-saw table from a gin-stand; but as these things are not familiar to us Northern folks, we shall have to confess that we do not quite understand it, but I presume our Southern readers will know all about it.—Are you sure, friend S., that you fully utilized all the honey that has been gathered in your vicinity?

WINTERING BEES.

How Friend Hurd Wintered His Bees When Others Failed.

ALSO SOME FACTS ON TOP VENTILATION FOR CURING DYSENTERY.

I STARTED two years ago this fall with 35 colonies, all black; lost two in wintering. My excess was 54 last year, making me 87 colonies. I bought 5 Italian queens a year ago of J. S. Harvey, for which I paid him \$11.00. I reared 25 nice queens last year from them, and had the old ones left, making me 30 in all, pure Italian queens. I went into winter quarters with my bees in fine condition, as I thought, and I guess they were. I got through the winter with 50 colonies, all on their winter stands. My hives are made of oak, $\frac{1}{4}$ of an inch thick, and I used no wind-break, no cushion, nor any thing of the kind, and my bees went through the winter better than any others through this country. Nearly all the bees through this section are dead. How is this, that mine went through in these light hives without protection? I will tell you. At one time during the winter I found that my bees had dysentery, and I immediately made top ventilation in my hive so the air could pass through the hive from the bottom to the top and pass out; the bees were all right in a few days. Mr. Edward Young, a bee-man, was here when I was fixing the ventilator, and he said it was a grand idea, and fixed his bees the same way, and he came through all right. Mr. Root, I should like to have your opinion on this ventilation at the top, so the fresh air can pass through the hive, in case of dysentery, to carry the filthy smell away. Don't you think it a good thing? It saved my bees this winter, I am satisfied.

ROUSSEAU HURD.

Mt. Erie, Ill., June 18, 1885.

Friend H., it is a fact, as a great many reports scattered through our journals for years past will show, that abundant ventilation through a hive will save them where other stocks not so ventilated die. Hives split open, tipped over, or left by accident so the wind whistles right through them, will winter during a disastrous season, when all the others die. This has been proven over and over again; and our directions for wintering, as given in the A B C book, are all based on this point; viz., leaving the entrance wide open, and filling the upper story with loose chaff in a sack of coarse bagging.

DOOLITTLE'S NEW MODE OF FORMING NUCLEI.

Doolittle now, the world must say,
Is truly an honest man;
But in all his dealings with the bees,
Has a most laborious plan.

But when I want to fool about
A lion's secret lair,
I always make a point to know
The lion is not there.

Just how it is, or comes about,
I do not wish to say;
But the lion and I are always there
At a different time of day.

So I'll say nothing about him now,
But leave till another day
The funny things I'll show you—
(When the lion's away).

But I can make a side remark,
And have just time to say
(While the lion is otherwise engaged
And looking another way).

That I went to work to make a swarm
As Doolittle told us to do;
And I took a box and wire screens,
And I took a funnel too.

So I shook the bees into the box,
And got the queen in her cage,
And so I was "armed, all cap-a-pie,"
As directed by the sage.

And here he says to jar them well—
To knock them up and down
(May be I've got it a little mixed),
And kick them round the town.

Then roll them down your cellar stairs,
For they need a little rest;
And dark and cold let the cellar be,—
Twill suit the bees the best.

And when three hours have passed away,
As three hours sometimes will,
Why, jerk them out and jar them more,
Or roll them down the hill.

Now you must open your little door,
And let the queen run in;
And now to roll about and jar,
In earnest you begin.

I had no cellar that was dark and cold,
But I had a mountain-side,
And I thought I would jar them all at once,
And thus much labor save.

So I climbed with them the mountain-side,
When every thing was still;
And, hoping they would reach the cave,
I dashed them down the hill.

From rock to rock they bounded on
From brake to bush they ran;
Such a jarring, no bees ever got
Since this wicked world began.

I bounded down the mountain-side,
I shouted out with glee,—
"This is the way to make a swarm—
Doolittle's the boy for me!"

When I got down by the creek and cave,
There was neither of them there;
For I saw naught but a rushing cloud,
And a roaring in the air.

But a thousand spears dashed in my face,
And into my arms to boot;
Oh how I yearned, just then, to see
Doolittle or Amos Root!

Why didn't you warn us, once for all,
O sage of the hive and pen,
Not to take them up on a mountain high,
And dash them down again?

When you wish to make a colony,
And thus increase your stands,
Don't fool with boxes and wire screens,
Funnels, and old tin pans.

But take two combs of brood and bees,
Or you may take but one.
And a larva-comb, not three days old,
And your job is nearly done.

So now you can go to other hives,
And take three combs or more,
And carry them to your nucleus hive,
And shake them at the door.

The baby-bees will all run in;
They have no wish to roam.
While the others that are old and gray
May scatter and break for home.

You may give them now a virgin queen,
Or give them but a cell,
Or a laying queen you may give to them
The next day very well.

Why didn't you warn us, once for all,
O sage of the hive and pen,
Not to take them up on a mountain high,
And dash them down again?

San Dieguito, Cal.

J. P. ISRAEL.

THE GALL-MITES THAT INFEST PLUM-TREES.

ALSO SOMETHING ABOUT MITES IN GENERAL.

A FEW days since I received some plum leaves covered with galls on the under surface. They came from F. A. Snell, of Milledgeville, Ill., who writes that they are very abundant on some wild plum-trees in his yard. He asks whether there is any danger of their attacking the leaves of his tame plum-trees. I at once recognized these galls as the excrescences formed by the gall-mite, a species of *Phytoptus*. These are injurious to the trees which they infest; and as the wild and cultivated plum are so closely related there must be danger that any insect which attacks one will also attack the other if in the vicinity.

The galls are on the upper side of the leaves, and are hairy, teat-like processes, often so crowded as to be in clusters of five or six in a place. They are yellowish or brown in color, though the color may have changed somewhat, as the leaves were considerably dried up. The leaves appear as seen in

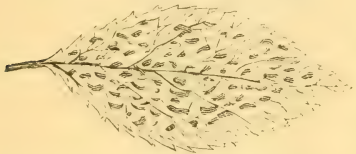


FIG. 1.

Fig. 1. These galls are often on the under side of the leaves, so that the mites can leave the galls and pass out to a new place on the leaf, where by irritation a new gall is formed. The mites which, for these galls, are so minute that they are hardly visible to the unaided vision (they are oblong, Fig. 2), have four feet and four pairs of hairs on the body. These mites lay eggs in the galls, which produce other mites, and thus the galls become very numerous during the season.

It is of more interest to bee-keepers to know that our maples and basswoods suffer from species of *Phytoptus*. *Phytoptus abnormis*, Garman, attacks the basswood. *P. quadripes*, Shimer, the soft maple, and *P. acricola*, Garman, the sugar maple. A soft maple in our college apiary is badly attacked by these mites.



FIG. 2.

These mites, as will be seen above, have only four legs, while all other mites (mites are the lowest order of the sub-class *Arachnoids*) have eight legs. There are many mites of interest to us. The sugar and cheese mites work on the articles of food which gave the names. The itch mite causes the pustules on the hands, usually between the fingers of persons suffering from that disgusting disease.

The red spider is a species of mite, which is often very injurious to house-plants when kept in very dry rooms, and to evergreens, and other plants and trees in very dry seasons. Frequent and copious drenchings with pure water will usually destroy these red spiders.

The remedies for the *Phytopti* are sprinkling with sulphur, and picking and burning affected leaves, or burning the entire plants and tree. Picking the leaves is the best plan, if commenced as soon as the galls are seen.

A. J. COOK.

Agricultural College, Mich., June 13, 1885.

FALSE STATEMENTS IN REGARD TO THE HONEY BUSINESS OF OUR COUNTRY.

As a protection to our bee-keeping population, we propose in this department to publish the names of newspapers that persist in publishing false statements in regard to the purity of honey which we as beekeepers put on the market. When any paper will correct the matter publicly, with suitable apology, the name will be dropped. Any of this article will be mailed to the editor of any paper giving place to such statements, with a written protest, before the name of the paper is given. After the lapse of a small time, if the matter is not corrected we will keep a standing notice to warn the people at large that said paper does not scruple to give publicity to this class of falsehoods.

IN an article published in the *Republican*, of Westfield, Chautauqua Co., N. Y., we find the following. The article is on bee-keeping. It is signed A. M. Williams, and is credited to the *Examiner*, of New York. After telling how to keep bees, Mr. Williams winds up as follows:

Bees will carry into the hive almost any kind of sweet, and in this way glucose can be and is introduced into the hive and sold as cap honey. This is one kind of fraud not easy to detect. The greatest amount of this adulteration is in the honey that is sold in liquid form, and probably the largest part of such honey the bee has never seen.

Now, then, I should like to ask Mr. Williams, why that last clause? By his using the word "probably," we should infer he really does not know much about it. The article he writes shows he does not know much about bees. Well, if he does not know much about the honey in the markets, why should he guess that the largest part of it was never seen by honey-bees? Does he judge by the way he manages his own business, or by the way the people usually do with whom he is personally acquainted? Has it got to be so that a reporter can not expect to have his articles read unless he puts in a strong sprinkling every now and then to the effect that all men are frauds, cheats, and liars? I have personally examined the honey offered for sale in our cities, towns, and villages; and as a rule I have found it honest, and of fair quality. The only adulterated stuff I ever got hold of was in some tumblers from C. O. Perrine, and that was a good many years ago. Of course, there were all grades of honey shabbily put up; but even this has always been, so far as I could find, the product of the bees, and nothing else. Thurber's comb honey in glass jars, of course, has been put upon the market to some extent, with corn syrup surrounding the comb, to prevent granulation; but I believe this has had small sale, comparatively, and the price charged for it has always been more than is usually asked for pure honey.

AUTOMATIC SWARMING.

A REPORT OF SOMETHING ALMOST A SUCCESS.

GLEANINGS is at hand. Many thanks. I think it is a great medium between bee-keepers, as they all get each other's ideas through its columns, thereby rendering great assistance to one another. I notice on p. 380, June 1, 1885, Mr. W. J. Farriss speaks of a swarm of bees hiving itself. Well, that is not strange to us bee-men in this part of the country, for a man here has invented a plan that causes the swarms to hive themselves in almost every instance. Nearly every bee-keeper has been very successful with it here. Some have not failed in a single instance. Some failures have been reported, where the queen was not able to fly from the old hive to the new one. I know many will doubt this, as they did here until it was proven to them beyond a doubt.

Your smokers are wonders to the people here, and they please all who see them. I think there will be a good many bought here next spring.

F. C. MORROW.

Wallaceburg, Hempstead Co., Ark., June 26.

Friend M., this matter has been discussed for a good many years, but nobody has ever yet accomplished any thing of sufficient importance to have it retained, in the way of inducing bees to swarm and hive themselves. We should be glad indeed of further particulars in regard to your neighbor's invention. If the man manufactures the hive or the device for doing it, let us hear from him; but if it is something for which he sells "rights," I do not believe it will pay us to follow him further.

NATIONAL BEE-KEEPERS' UNION.

ARE BEE-KEEPERS AND WOOL-GROWERS ANTAGONISTIC?

PERHAPS the simplest way of introducing this matter will be to give the following extracts from the *American Bee Journal*:

IS THE LAW AGAINST BEE-KEEPING?

I am defendant in a case which is causing me some trouble and annoyance. For the last four years I have kept a lot of bees some two miles or more from my home lot. They are one-half mile back from the main road, where lives a man who has kept 100 or more of blooded sheep. He has sued me in the Circuit Court, having his damages at \$500; alleging, in his complaint, that his pasture is mostly white clover, and that the bees came in countless hordes, and drove his sheep from the pasture, and that they grew thin, and, in consequence, he has lost many during the winter. He asks that he be given \$500 and I pay the costs of the suit. He has engaged two smart lawyers to prosecute the case.

This, no doubt, will appear to many childish and absurd; but to one that has a costly suit to defend, coupled with poor health and plenty of cares without it, it is no laughing-matter. My excuse for stating the matter is, that it is of general interest. Our county papers have made mention of it, and it is already widely copied in other papers as a novel case, and it will be a "test case" also. Should the case go adversely, through ignorance or prejudice, it will open the door for more suits of the kind, and soon every bee-keeper would be at the mercy of any one owning a one-half-acre of clover, though he might own acres of his own.

My opponents claim that they have a precedent in a sheep and bee suit somewhere in the State. Of course, we do not acknowledge that our bees have ever injured the sheep in the least, and we feel that experiment, science, and common sense will bear us out in this assertion; yet this case, like every other one, has its adherents *pro* and *con*.

The simple fact there is a case on trial makes some believe that there is something in it.

In relation to this suit between my neighbor, Mr. A. J. Powers, the plaintiff, and myself, the defendant, I will say that I have had no quarrel with him, except in this matter, and I have got shy of this suit, and told him that I did not wish to waste any money on it. I offered to leave it to referees, telling him that we might get some disinterested parties and let them investigate and decide for us. But he would not; he said that he wanted it decided whether I or he owned the farm on which he lives. If I owned it he would move off and let me take possession; if he owned it he wanted the use of it. This is no new thing as far as theory or threats are concerned; it has been threatened for years, and more suits of the same nature are talked of, if this one goes to please the plaintiff.

I do not want the readers of the bee-journals to infer from the foregoing that I am poor, friendless, or forlorn, and in a heathen land; for we have good people here, and a fair share of intelligence. I have many friends, and can give as reference many of the best men in our county. If any one wishes for confirmation of what I have written, I am not afraid to have them write to Mr. Powers himself, asking him whether I am a man of peace and truth.

In conclusion I will say that I have supposed that Mr. Powers has had some instigators, and was encouraged to commence this suit. His lawyers have told him that bees are stock, and that we would be obliged to restrain them as such. They know full well that if we are obliged to do this, it will be the death-blow to bee-keeping. I had resolved to fight this matter to the best of my ability, and I told my opponents that they could rest assured that it would be well contested through the courts of the State, if necessary. I feel that it is a case that every bee-keeper in America is interested in, and I think it is not begging to ask them to assist in the defense, as Mr. Heddon suggests in his plan, which meets my entire approbation, and would, had I no suit of the kind on hand.

S. I. FREEBORN.

Ithaca, Wisconsin.

The following is a copy of the Constitution:

CONSTITUTION OF

THE NATIONAL BEE-KEEPERS' UNION.

ARTICLE I.—This organization shall be known as the "National Bee-keepers' Union," and shall meet annually, or as often as necessarily may require.

ARTICLE II.—Its object shall be to protect the interests of beekeepers, and to defend their rights.

ARTICLE III.—The officers of this Union shall consist of a President, five Vice Presidents, and a General Manager, who shall also be the Secretary and Treasurer, whose duties shall be those usually performed by such officers. They shall be elected by ballot, and hold their several offices for one year, or until their successors are elected and installed. Blank ballots for this purpose to be mailed to every member by the General Manager.

ARTICLE IV.—The officers shall constitute an Advisory Board, which shall determine what action shall be taken by this Union, upon the application of any bee-keepers for defense, and cause such extra assessments to be made upon all the members as may become necessary for their defense.

ARTICLE V.—Any person may become a member by paying to the General Manager the entrance fee of one dollar to the Defense Fund, and an annual fee of 50 cents, for which he shall receive a printed receipt making him a member of this Union, entitled to all its rights and benefits. The annual fee shall be due on the first day of July in each year, and must be paid within 30 days in order to retain membership in this Union.

ARTICLE VI.—Donations of any amount may be made at any time to the Defense Fund, in addition to the entrance and membership fees, and the regular assessments made upon the members by the Advisory Board.

ARTICLE VII.—The Defense Fund shall be kept for no other purpose than to defend and protect bee-keepers in their rights, and in such cases as are approved by the Advisory Board, and shall only be subjected to drafts regularly made in writing by the Advisory Board.

ARTICLE VIII.—The annual fees paid by the members shall become a general fund, from which shall be paid the legitimate expenses of this Union, such as printing, postage, clerk hire, etc.

ARTICLE IX.—Meetings of this Union shall be held at such times and places as shall be designated by the Advisory Board, or upon the written requisition of ten members.

ARTICLE X.—This constitution may be amended by a majority vote of all the members at any time.

It will be seen from the above, that the object of this union, in the words of the Constitution, is to protect the interests of bee-keepers, and to defend their rights. For a copy of the Constitution, voting-blanks, etc., send to the editor of the *A. B. J.*, the

general manager, 925 W. Madison St., Chicago, Ill. Every loyal bee-keeper interested in the cause should have a copy and enroll himself as a member of the Union.

Our readers will further see, that if our friend Freeborn loses the case the bee-keepers may have a troublesome decision on record with which to deal hereafter. Let there be no half-hearted work about it.

NOT READY FOR BLASTED HOPES.

SOME WORDS OF CAUTION IN REGARD TO ROBBING, AND OTHER MATTERS.

I AM not ready to go into Blasted Hopes yet; but, on the contrary, I am more hopeful than ever before, and feel more determined to be faithful over the few things intrusted to my care, having just passed through one of the most trying winters; and when I read of the great loss sustained by many (and some of them veteran bee-keepers too), I realize that I have reasons to be thankful. Although last season's honey-crop was short, yet the 600 lbs. which was all the surplus we got from 33 colonies (spring count) was of excellent quality, being gathered exclusively from the white clover. We increased our stock to 49 colonies; lost one by robbing (by the way, friend Root, I consider robbing the most disagreeable feature in bee-keeping); we went into winter quarters with 48 colonies on summer stands; lost three in wintering; doubled back to 43, all in fair condition at present.

I am glad to see an increase of interest being manifested among bee-keepers in this vicinity, as we are being plied continually with questions regarding our way of managing bees, what hive is best, etc. You may be sure I am glad to be able to help all such as will profit by the advice given; that is, by taking a bee-journal or some good reliable bee-book, and post up by studying the matter for themselves. Yet there are many people who think the expense too great, and go blundering along in an uncertain manner, losing more each year by not keeping posted than the books would cost, besides losing the pleasure of knowing just how to go to work to achieve the most satisfactory results.

The subject of who should keep bees has been discussed at length in the journals in time past. Well, from the past season's observation I have almost come to the conclusion that no man should be allowed to keep bees unless he will post up sufficiently to enable him to handle them in a rational and intelligent manner. During the past season I was aware of two instances of persons being so badly stung as to endanger their life, and to render the assistance of a physician necessary—one, a boy about 14 years of age, was stung while assisting a man in hiving a swarm for a widowed lady. I was with him in a few minutes after the occurrence, and it was truly horrible to witness his suffering, being almost a mass of stings from head to foot. Any intelligent bee-keeper knows there is no occasion for trouble of this kind, in hiving a swarm of bees when settled on the limb of an apple-tree within 8 or 10 feet of the ground, which was the case in this instance. The other was that of a man who was stung in trying to take honey from a box hive during the drought, when robbing was the order of the day.

SARAH E. DUNCAN.

Lineville, Iowa, June 8, 1891.

MRS. CHADDOCK TALKS ABOUT WINTERING, ETC.

BEING BORN LUCKY.

I HAVE read all the articles in the bee-journals on wintering bees, and I have inquired into the losses around me, and I have come to the conclusion that neither hibernation, pollen, honey-dew, dead-air, nor chaff, have any thing to do with it. It is fate, or the star you were born under. There is no other way of accounting for the contradictory reports and opposite results.

I have kept bees for fifteen years, and I never lost a full colony till this winter. I put chaff cushions over my bees this winter, just as I always have done, and one-half my bees died. "Honey-dew?" Yes, of course, but one-half mile from me a man had six colonies last fall; he did not pay any attention to them (they are in American hives), and they had the same pasture that my bees had, and they all lived. So it was *not* honey-dew. A mile away lives an old bee-keeper. He has had bees for forty years, and he has them in old box hives; he doesn't care about keeping bees; is too old to climb into the apple-trees to get the swarms down; doesn't think there is much money in bees any way; women are afraid of them, etc. Well, now, do you suppose he lost all his bees last winter? No; he has eight or ten left. He had the honey-dew too. So it is not contracting the brood-nest, and packing, and all that, that make bees winter well. It is wishing them dead that keeps them warm.

All writers say there must be no honey left around the hives when there is no honey coming in, as it will start the bees to robbing. Mrs. L. Harrison told me that several of her colonies died in the winter of 1882, and that in the spring she was sick, and she let the other bees clean out the honey where the bees had died, and that after it was gone she put scraps and refuse honey in the empty hives, and let them eat that, and she had no robbing. Now, why did not her bees go to fighting? Simply because Mrs. L. H. was born under Jupiter or Saturn, or whatever star it is, that it is good luck to be born under.

HEDDON'S PLAN OF PREVENTING AFTER-SWARMS, AND HOW IT TURNED OUT.

I have tried Heddon's method of preventing after-swarms, and failed. My old colony faced to the east. When the swarm came out I caught the queen, turned the old hive around so that it stood at an angle of 45 degrees, and put the new hive full of foundation in the old one's place. In a few minutes the swarm came back, and I let the queen run in with them. Two days later I turned the old hive back so both of them faced to the east; four days later, six days after they swarmed, we carried the old hive to a new location, and on the eighth day they sent out an after-swarm. They alighted on a young elm, and I opened the hive and found one young queen and about a dozen queen-cells. One of them was just ready to come out; in fact, the door was partly open. I introduced to a queenless colony, and cut out all the other cells. Then I took the swarm down in a basket (tied it on a bean-pole), and they all went in. It was a large swarm, as large as many first swarms. It is my belief that, as a general thing, it will work all right, but this colony was an extra strong one, and so many young bees coming out made them feel strong and independent.

HOW I MADE BEESWAX, AND WHY I AM OUT OF THE BUSINESS.

If your "fool-killer" is at home, please send him around this way. Ahem! I had a good many old combs; and when the bees "went dead" I rendered the combs up and thought I could exchange it for foundation. I put it in a sack made of gunny, and *boiled it* and dipped off the wax that rose to the surface. After it got cold I *boiled it* again, and set the wash-boiler off and let it cool slowly. Then I took it out and scraped the propolis (or something) off the bottom, and *boiled it* up and let it cool, seven times. I thought as long as that stuff was in it, it ought to be *boiled* some more. I *boiled it* in the wash-boiler, and once a week I cleaned up the boiler so that we could use it for washing purposes. Once it boiled over and took fire, and might have burned the house down if no one had been there to put it out. Well, the more I *boiled* that wax the worse it looked, till I began to think that it was all a humbug—never had been beeswax at all, but just propolis and dirt. Finally I sent to Messrs. Dadant and asked them to send me foundation for it. Yesterday I had a card from them saying, "Your wax has been spoiled by *boiling*. You should never bring it to more than a *quiet boil*" (I *boiled* mine furiously), "and melt it only as much as needed to clear the dirt away. There will be about one-third waste in this way. When you cool it, let it cool *slowly*." I sent the wax by express, because they ordered me to; but at the time, I thought it looked as if a freight passage was good enough for it. I have written to Messrs. Dadant to know how much they had to pay on it, and I shall pay it, and next time I will send—no, I won't, there will never be any "next time" for me to render beeswax, if I can find fires anywhere near to throw it in.

Now, you need not any of you send me circulars telling the good qualities of your wax-extractors. I won't buy any of them; I am not in the beeswax business any more. There will never be any more beeswax cooked in my wash-boiler, nor on my stove, nor anywhere on this farm; not if I know it. Ahem.

Vermont, Ill.

MAHALA B. CHADDOCK.

REPORT FROM AN A B C SCHOLAR.

AND SOMETHING ABOUT THE NUMBER OF YEARS IT TOOK HIM TO GET SO HE COULD KEEP BEES SUCCESSFULLY.

IN 1871 or '72 I had a colony of bees given me that were in an old box hive, which I thought as good as any. We were much pleased with them, and thought we should soon be feasting on honey, so we fixed a honey-box on top, and waited patiently. But no honey reached it, and of course we were disappointed, and concluded it was a poor season for honey. The next spring found us without bees or honey. Supposing that the worms had destroyed them, and thinking there was no way to prevent, we concluded it was not worth while to waste time with bees. In a year or two after, we saw GLEANINGS advertised, and so, through curiosity, we sent for a sample copy, which induced us to subscribe for one year; and the information gained caused us to procure a new swarm of black bees in a Langstroth hive, which was in 1878. They filled the lower story, that season, but nothing more. In 1879 I received parts 1st and second of the A B C book; and by its instructions

we divided our colony, and being very busy on the farm, did not give them further attention, so no surplus but plenty to winter on. In 1880 we increased to four colonies, which were put in Langstroth hives, and this season gave us no surplus honey, but plenty to winter on. They were left to winter without any extra protection, and the result was, the spring of 1881 found us without any bees. By the use of movable frames I knew it was not worms this time. Some said it was the cold weather; but my bees were dying rapidly before cold weather commenced. I then purchased an A B C book complete, and read it carefully, and began to feel more interest in bees, and that it would be a pleasure to manage them according to the improved methods. In June I received three frames of brood and bees, with a fine Italian queen, from your apiary. As it set in very dry they did not do much until buckwheat bloomed, from which they filled the brood-chamber with bees and honey. The description of the chaff hive gave me a desire to test their good qualities. I received one from your factory, placed my bees in it, and a chaff cushion over them. As it was the only chaff hive in this country, I felt that I was a little ahead. They came out in the spring of 1882 in fine condition, and did well. The following season I received several pounds of surplus honey, and increased to four good colonies by fall, which were all put in chaff hives, and the spring of 1883 found them all in good condition. As this was an extra season we had plenty of honey which we enjoyed, and some to sell. By fall we had ten strong colonies and five nuclei, from which we had been learning to raise queens. We sold a few, and introduced four into our own colonies that had hybrid queens. They all raised nicely marked bees but one. We find our strain of Italians so quiet to handle that we are trying hard to keep them pure, which is a task, as there are blacks and hybrids near us on three sides.

In the fall of 1883 we placed 14 in chaff hives, as instructed by the A B C book. Four of them were three and four frame nuclei we had raised queens from. They were all left on their summer stands, as an experiment. One of three frames in a Langstroth hive with division-boards and cushion, and cushion over them, was carried into the cellar when the mercury neared zero, and returned when it moderated, which caused several trips; frequent examinations through the winter found them in good condition, and the first of April, 1884, they were all doing well. The colony that was carried to and from the cellar had the most dead bees.

Last season was not very good for honey. White clover was worked on but a short time, and but very little basswood bloom in this section. We received only about 500 lbs. of honey—half comb and half extracted—and increased from 15 to 21. In the fall of 1884 we put them in shape for winter, as follows: 14 in chaff hives, prepared as winter before; two in Langstroth hives on six frames, with chaff division-board on each side, and cushion above; five of four frames, in L hives, prepared as last two. All left on summer stands came through all right until the middle of March, when I discovered one of the weak colonies dying very fast, and in one week were all dead. The others came through safe, and made a fine start on sugar maple, fruit-bloom, and black locust. The white clover is not furnishing much honey yet, although there is plenty in bloom.

A REPORT ON CARP CULTURE AS WELL AS BEES.

My carp are doing finely. We have a quantity of young fish about one inch in length. Those that are one year old make a fine showing when fed, which are from 8 to 12 inches long. We seined our pond in April; caught 19 old ones that weighed 6 to 7 lbs. apiece; sold six of them and 125 small ones 6 to 10 inches. The old ones were 20 to 24 inches in length. We put 7 large ones in a pond built last fall, where our small ones are.

Springboro, Ohio.

W. H. CARPENTER.

Our friends will notice from the above the length of time it took an average farmer to get properly hold of the subject of bees so he could make it a safe and paying investment. It also illustrates pretty well the reason why our ventures in these industries sometimes pay and why they do not pay. You see, it all depends upon getting acquainted with our business, and managing understandingly. Another point comes in right here. If a man has learned to succeed with bees, he will be pretty sure to succeed with other things—carp, strawberries, or whatever he may take a notion to go into; because the same fundamental rules that give success in the one case are pretty likely to give success in another.

SWARMS WITH CLIPPED QUEENS.

FRIEND DOOLITTLE TELLS US HOW TO MANAGE THEM.

SOME apiarists seem to think that a colony having a clipped queen causes much trouble when swarming, and I note an expression in a late number of GLEANINGS which looks as if the editor of that paper held the same views. This seems strange to me, for I would rather care for three swarms whose queens are clipped, than for one where the queen is not clipped. Believing that all can not understand the best plan of managing such swarms (else the above idea would not obtain), I will give my plans, with a view of helping the many who practice natural swarming.

I first get a light strong pole, from 10 to 18 ft. long, according to the height of the trees near the apiary, and to the top of this pole I wire some mullein-tops of last season's growth. These should be left open, and should reach up and down the pole eighteen inches, so the bees can get a good foot-hold, in order that they need not keep dropping off when clustering upon it.

We next want a round wire-cloth cage, about two inches in diameter and eight inches long, with a permanent plug in one end, and a movable one in the other. Having attached a wire to one end of the cage, we are ready for the swarm. Seeing one issuing I step to one side of the front of the hive, and stand about five feet away, so I can take a view of the whole front of the hive, and two or three feet of the ground in front of the entrance, at a glance, when, if the queen is out, I almost instantly see her; and if not out I see her as soon as she issues. I used to get close to the entrance to look for her, and often looked a long time before I found her, owing to the short range of vision which contracted the breadth of the field seen at one time. When the queen is seen, put the open end of the wire-cloth cage down so she can crawl into it, which she will at once do, when she is secured by putting in the mov-

able stopper. By means of the wire, attach the cage to the mullein-tops, and hold the top of the pole in the midst of the bees; for by so doing they do not scatter over a large field, as does a swarm not having a queen with them, and they will often alight on the pole besides. If they begin to alight on a tree instead of the pole, place the bunch of mullein-tops close up under them, when they will at once begin to cluster on it. After a part are clustered on the pole, push the pole up and out of the limbs, so that no leafy twigs hit it, and leave it until they are all clustered, when you can carry the swarm and hive it wherever you choose. If the place of hiving is within four rods of the alighting-place I wait for only a few bees to get clustered on the pole when I take it to the hive and start those I have to running in, when the whole swarm will come. In this case it is well to cover up the old hive with a sheet, or close the entrance to it for a short time, as a part of the bees may go to the old hive before they hear the call of "A new home is found!"

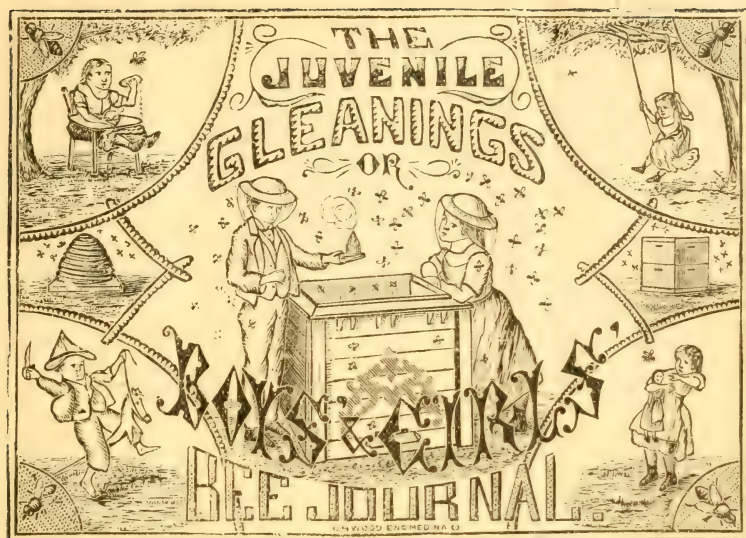
As the season advances I use the Heddon plan (as given in GLEANINGS for June 15), of working the hives to prevent after swarms; and here especially is a clipped queen a decided improvement over those that are not, Heddon to the contrary notwithstanding. Proceed to catch the queen as before; and as soon as you have her, get your new hive and bring it to the old stand. Now wheel the old hive half way round so it faces in the opposite direction, and place the new hive just where the old one stood, when I place the cage, with the queen in it, endwise to the entrance, one end being within an inch of the center of the entrance. The bees from the field which have, during this process of changing hives, been hovering around, now find the queen, when they set up a hum and fan their wings, which soon attracts the swarm, that comes pouring into the new hive by the thousand. I now take the cage, giving it a little jerk to shake the bees off from it, when I remove the stopper; and as the queen runs to the open end, hold it down to the entrance, when in she walks as nice as you please. If two or more swarms get out at once I always let them alight on the pole as first given, when I can carry and divide them as I please in hiving.

When I am away from home, Mrs. D. or some one else watches the apiary, simply noting the hives which swarm, so as to tell me which they are when I get home. If the queen does not get back, a look about and near the hives always reveals her in a little ball of bees, from the size of a butternut to that of a goose-egg. In short, the clipping of our queens' wings is one of the improvements of the age, second to none of the advancements made within the last twenty-five years, in the opinion of—

Borodino, N. Y.

G. M. DOOLITTLE.

I am quite familiar with all you mention above, friend D.; but when we worked entirely with clipped queens, a great many times we did not find them at all; and at other times, as you may remember, the swarm would unite with some other swarm having perhaps a virgin queen, and then they would all go off together. We have also practiced putting the queen in a cage and tying her on a pole, with different kinds of arrangements on the pole to induce them to cluster; but while some swarms clustered around their queen almost immediately, as nice as could be, a good many would persist in clustering almost anywhere *except* near that caged queen.



He that is faithful in that which is least, is faithful also in much. LUKE 16 10.

MYSELF AND MY NEIGHBORS.

Discretion shall preserve thee, understanding shall keep thee.—PROV. 2: 11.

YOU will remember, little friends, I did not get through with my talk about discretion last month. We often speak about children arriving at the age of discretion; but I showed you by some plain examples that even an old hen has some degree of discretion. She decides what is best to do under certain circumstances, and decides with quite a little wisdom. Well, if I am right about it, children also show discretion and wisdom, and a sort of judgment, at a very tender age, though often it requires some special circumstance to bring out their wisdom and judgment; for as a rule, parents and friends take the responsibilities from their children.

A few days ago Huber slipped while going out of doors, while somebody was holding his hand, in such a way as to sprain his wrist; and it was a pretty bad sprain too. I suppose, for he cried a long while, and almost screamed when anybody attempted to examine the wrist. He finally almost set up his authority, and decided it should not be touched—not even by mamma. At this crisis the matter was carried to papa, and his superior (?) judgment was called upon to decide. I decided with Huber to let the wrist alone, and I also decided we did not want any doctor. This last decision almost created a war in the camp. It brought on a pretty hot discussion, any way, and papa gave his reasons as follows: His

arm is not broken, because the bones of a baby do not break; they are too soft. The shoulder is not out of joint, because he does not say a word against having his shoulder handled. Neither is there any thing the matter with his elbow, for the same reason. The difficulty is, therefore, necessarily located in the wrist; but it is not a very serious one, for he can move his fingers. The bones of the wrist are not out of place, because Ernest felt of them when the accident first happened, and satisfied himself that the injured wrist was exactly like the other wrist. If one of the eight bones was out of place, Ernest would have discovered it; for he is a boy of pretty good judgment and discretion. He has been at college, you know. Maud insisted that this was too serious a matter to jest about; and if Huber grew up crippled for life in one of his hands, we should all of us repent most bitterly that a doctor was not called for at once. A doctor would have given him great pain by going over exactly what Ernest had done, and the wrist was now swollen, and so sensitive that he almost screamed if it were touched even by mamma. He just lay in his crib all day, and kept still; and when he slept he slept without turning over and "raising Ned" as he usually does. He had decided with what baby sense he had, that the proper thing was to keep still, and let it get well. I told him that God made the little wrist and little hand, and that God would fix it in a few days, if he knew he were real careful and keep still. God knew how, for God made the thunder, and furthermore,

God loves Huber. These words seemed to give him comfort, and he would sometimes vary the question by saying interrogatively to me, "God loves baby?"

"Yes," I assented, "and God will make the little hand all well."

Twenty-four hours passed, and no change for the better. In fact, it was *more* painful. The women-folks clamored for a doctor again. I recommended waiting another twenty-four hours. By this time, with the aid of the sling which mamma fixed, he was able to get up and walk around; but that sprained wrist was his property. No one had any right to touch it; in fact, he preferred not to talk about it. I asked him in the morning if it was better. He replied with two short words, "No! worse." This aroused a big laugh among the members of the household, and even brought a smile to the corners of Huber's mouth. On the third day he used it enough to hold a piece of bread in his fingers, keeping it still in the sling, and after about four days he announced in the morning with much rejoicing, "Paddy all well; oh goody! goody!" He came to me to tell me about it; and after saying that God had made it well, just as I said, he kept repeating, "Nice God; made baby's paddy all well." His mamma rather objected to his familiar way of expressing his praise to God; but I told her it was all right. It was the best way that he knew of for giving thanks, and it was surely acceptable to Him who fashioned these little household treasures. The wrist is perfectly well now.

Perhaps I might remark here, that such a sprain is more painful than a broken bone. Had we sent for a doctor, the doctor would have had the credit; or if we had put on some patent liniment, *that* would have had the credit. Huber's mother did try to put on some arnica, but he objected; and I suggested that arnica was probably just as good as warm water, and no better. Then we had a discussion in regard to this and that medicine. I replied that they would have to excuse me for having but little faith in arnica or camphor, and every thing of the sort, because I could not understand how anybody discovered the virtue of arnica, even if it had virtues. There are thousands upon thousands of herbs and roots in the fields and woods; there are also a great multitude of diseases. If there were only one disease afflicting the human family, it might be possible to try all these things one by one, in the treatment of said disease; but when it comes to trying all the herbs and roots, to say nothing of minerals, on all diseases, the number of tests to be made would be like the sand on the seashore. And then on top of it all, people usually get well where you do not do any thing. How, then, are we *reasonably* to decide that it was arnica or camphor that performed the cure? God gives us reason, judgment, wisdom, discretion, or whatever we may call it. Are we using that good judgment which he gave us, or are we trusting to what we have heard folks say, and to superstitions handed down?

Let me use an illustration. If you take a dozen cards and tear each one in two in the

middle, then shake up the 24 pieces, you might, after a little trying, pick out two pieces that would match; that is, you could find a pair of pieces that would fit together just as they were before being torn. If you do not know how long it will take, try it. Now, instead of a dozen pieces, suppose we take a hundred. It might take you half a day to match even one card; but suppose instead of a hundred you make it a thousand, or even ten thousand; instead of putting the pieces in a heap, scatter them over the fields. Is it at all likely that you would ever get two pieces that would fit as they were originally? How, then, did anybody ever find out that *arnica* is good for a *sprain*? Our stenographer suggests, that as arnica is a poison it probably has some effect one way or the other on the flesh. But plenty of things are recommended as remedies that are not poisonous at all. Take the remedies for bee-stings, for instance. Enough are recommended to fill a book; and yet I think I can prove conclusively to anybody who will use his good judgment and reason, that not one of these remedies that has ever been recommended has any effect on the sting, one way or the other.

□ Now, it may be, little friends, that Uncle Amos is a little extreme in his views, and may be you will exercise your judgment and good sense in not accepting all his teachings, and that is just what I want you to do. Use the discretion and wisdom and understanding that God has implanted in your little hearts, exactly as Huber used his discretion and understanding when he insisted that nobody should touch his sprained wrist.

A TRIP TO THE HOT SPRINGS OF CALIFORNIA.

Also quite a little about Bees.

FROM AUNT KATIE HILTON.

DEAR CHILDREN:—Do you want to take a trip with me to the Montecito Hot Springs? If so, come along, for I am going. Here comes the four-horse stage. Hurry up, for we have sixty miles to go to-day. There, now we are all fixed, and off we go. Isn't it delightful? The easy rocking of the stage, the nice cushions at our back and on the seat, soften all jolts, and the balmy air of the morning, with the occasional glances of the grand hills, make us feel happy, even if we have been on the sick list, and still feel weak.

"Why, where are we going?" says one, as the stage seems to be standing almost perpendicularly. Soon the splash of the horses' feet in the water tells us we are crossing the Santa Ynez River. The chicks look out and catch glimpses of trout in the rapid stream. Many brooks come from the mountains, and the trout come down with the water. This delightful ride after an early breakfast makes us hungry, and we partake of the lunch put up by thoughtful friends; and, refreshed by a drink from the first brook we come to, we bound along until eleven o'clock, when we stop for dinner. It is pretty early, but it is now or never, so we pile into the little "building and rest and eat until we see the fresh horses being put on to the stage. We climb into our seats, and away we go. Now we are

going up the mountain. The horses can go only on a walk; so we peep out of the door, first on this side and that, trying to see all the wonderful sights we have heard existed along the road—deep cañons, so near the road that it seemed only marvelous that any one could drive four spirited horses along without tipping over the stage, and many other startling things greet our sight; but, up we go, and soon we hear a sweet sound breaking upon the stillness that we had all fallen into within the stage. It proved to be the voice of an outside passenger singing, "Jesus, lover of my soul." Soon the deep bass of the driver chimes in, and the music charms us all until even the baby catches the spirit, and he calls for more. When the hymn is ended, so the mountain-side echoes with song, and as the air gets lighter the nearer the top we get, even the weak-lunged ones try their voices.

Oh! what is that? Well, I declare, if here isn't an apiary away up here on this mountain. One, two, three, four. Oh! I can't count them. I wonder how many hives there are. "I should judge about 50," says one; and see! there is a man looking up, kind o' wishful. I wonder what he wants.

"Mail!" sings out the driver, and three papers whiz through the air, landing on the grass by the man, who waves his hand for thanks, and we disappear from his view around a sharp bend. What lovely flowers! I never saw anything like them before; did you? They grow only in high latitudes.

Here we are at the next station. Out we all tumble, to get a drink from the stream which is pouring from a spout which comes from the mountain-side. How fresh and good it tastes! A man comes along with a frame of comb in his hand, and, looking in the direction from which he came, we catch a glimpse of some hives between the brush that lines the road.

"Do bees do well up here?" we ask the man.

"Yes, very well generally, but we are afraid it will be too dry this year."

"But I suppose you, like many others in California, made enough last year to pay for two years' labor, did you not?"

"We did pretty well," was the cautious answer.

"How near are we to the top, driver?"

"Oh, about a mile."

"Then we shall see Santa Barbara," says one devotee; "and the sea," says another; "and a lovely picture of both," says mamma; and, sure enough, when we do get to the top, what a picture the valley and ocean do make? But we could only just take one glance, for on we go, bounding over the rocky road, which is steeper on this side than the other, and quite rocky. In one place the rock is so smooth that places have been cut for the horses' feet, so they would not slip down.

Now we have got to the bottom, and are bowling smoothly along between orchards and grain-fields, and then we chatter into an air so laden with the perfume of honeysuckle and roses that we crane out of the door, thinking we surely are in Santa Barbara; but we are still a mile away. But, here we are now. Why! see those three rows of roses and fan-palms right in the street. Yes, the proprietor of the Arlington Hotel put them out, and has them kept in order. And, see! there is the hotel, with its lovely green lawn dotted over with strange trees and lovely flowers. Yes, and see that deer. "I see two," shouts a little voice. Sure enough, there are some deer among the trees, looking as

contented as you please. We stop at the postoffice, where the driver throws out five large sacks of mail, and then on to the Morris House, where we are treated so well that we feel quite at home. Even the little ones are charmed, and go trooping up the stairs, laughing and talking so excitedly that we have to admonish them to be more quiet, because they might disturb some one. How we did enjoy our supper that night!

"Why, mamma, here is a swarm of bees," shouts Ernest, pointing up to the corner of one of the wings. Sure enough, we could see myriads of the little rogues coming out from the cornice of that great building, right in the heart of the city; and a few days after they swarmed, and went into an empty box in the yard, so Mr. Morris has to be a bee-keeper, whether he wants to or not. It seemed symbolical—a hotel is much like a hive of bees; but the proprietor is something of a king instead of a queen, but is quite as indispensable, and it depends as much upon him as to whether the hotel is a success as it does to the success of the hive, with the kind of queen that is within.

Well, how are we to get to the hot spring? Tomorrow is the regular day for the stage; but we do not want to wait, so we get an express wagon to take us up. The people of the city have made a law that bees shall not be kept in the city; but the bees do not read the papers, and they have not heard about the law, so they keep trying to be owned all through the place, and I do not blame them; for if I were a bee I should want to live there too.

Just as we were getting ready to start we heard a commotion on the main street, and, looking out, we saw a swarm of bees alighting upon the tongue of a great dray-wagon. Such a scrambling as there was to find a man who could hive them! They managed to get the horses unhitched before they all alighted, and then a man came with a box and brushed them into it, and the wagon was pushed by hand until quite away from the bees. No one was stung; but what might have happened if any naughty bees had settled on those horses, none can tell.

Here we go, past fields of pampas grass, walnut-trees, and fruit-orchards of all kinds—past the city of the dead on one side, and the orchard and buildings of the poor-farm on the other. Then up, up we go, till it seems as though the horses can not possibly climb any more; but they are allowed to rest awhile, then on we go up the steep rocky road. The driver stops his horses, and jumps out to get some wild blackberries that he saw, and we also get out and partake of the feast that Nature gives us. Then on again up worse and worse roads, till finally we espy a house that seems to hang upon the steep hill-side, like a canary-cage on the side of a wall. The panting horses are wet all over with sweat, and we are glad for their sake that we have arrived.

There are two large springs coming from the side of the mountain, and bath-houses have been erected. The one at the upper spring is generally used by the ladies, and the lower by the gentlemen. We were soon ready for a bath, and felt well repaid for the trouble of getting here; but we felt a slight headache, from the altitude, we thought, but hoped it would soon pass away, as we had made arrangements to stay a week; but we had to go back next day, for our head got to aching harder, and we were so dizzy that we did not dare to walk along the road that winds like a gray thread among the

bushes of the mountain-side. The water is so hot that it is uncomfortable for a few moments; but one soon gets used to it; and as it is soft, one can use soap and not feel the stickiness that is left by some of the mineral springs. Some enjoy the rareness of the air, but I was told that a great many came who had to leave sooner than they desired, on account of headache.

There are quite a number of apiaries along the foot-hills between the mountains and the Montecito, but they expect to be driven away soon, as the orchards keep creeping up the hill-sides. Fruit does so well there that every one puts out trees as soon as they get the land ready for them. Every one concedes that bees will not injure the fruit until broken; but the yellow-jackets start it for them, and then they are declared a nuisance, and so they have to go. I have got home safe.

Los Alamos, Cal.

KATIE HILTON.

Why, bless my stars, Mrs. H., how your letter does make me want to go and visit my brother in California! And do you really find bees everywhere? I should think it would be a grand place to go. I shouldn't have the headache, you may be sure; and those hot springs—what a grand place to raise carp! You know they revel in warm water. Our "stenog" says that it is too hot; but, bless you, don't they have cold water somewhere around that could be mixed with it? and then wouldn't that hot water be grand for conservatories and tropical plants? Before I read your letter I thought I was perfectly happy with what was to be found on my own 18 acres; but now I am in quite a fever for a hot spring.

SUNDAY SCHOOLS AND BEE-KEEPING.

AN OLD FRIEND IN A QUANDARY.

A FRIEND stopped by the side of my buggy, where I sat waiting, a few evenings since, for the mail to be distributed.

"Next Sunday, you remember, we organize a Sunday-school in our own church. We may depend upon you for one of the teachers?"

"Oh! not as a regular teacher," I replied; "I will do as I have done in the past,—take the place of any absent teacher, if need be, when I am there. But, you know the bees."

"Yes," she returned, with a little smile, "I was afraid they might stand in the way. But is it quite right? Should they keep you from all good things—church services, the Sunday-school, the aid society?"

"You are no bee-keeper," said I, "and so I could never convince you that there is any right about it."

"Take a class in the Sunday-school," persisted my friend, "and just trust that the bees will do us well without as with you. You will be with us next Sunday, of course?"

"Yes," I returned, "if—if it be too cold or rainy for the bees to swarm."

And my friend passed on, shaking her head in disapproval.

Just then little Harry C. came whistling by, pausing a moment to unpucker his rosy lips, and wish me a smiling good-evening. I smiled in return, but I sighed as he passed on, for Harry is one of those bright boys one had rather talk to of a Sun-

day afternoon than interview the gentlest of Italians. I never see him but I am reminded of one Sunday when, in the absence of their teacher, I had taken the class of which he was a member.

"Harry," said I suddenly, as I saw his mischievous fingers creeping into the neck of the boy who sat next to him, and then reading from a verse in the lesson, "Be strong in the Lord. What does that mean?"

And Harry threw back his sturdy little shoulders, and clinched his small hands, and with proud eagerness exclaimed, "It means—it means to have muscle!"

But from thoughts of the Sunday-school I am suddenly turned by a thought of the blessed bees.

"Trust that they will do as well without as with you," says my friend. She little knows what inveterate Sabbath-breakers they are.

More than one brother bee-keeper has written upon this subject, and now will not some of the sisters, those who keep bees for profit more than pleasure, who number their colonies by tens instead of units, will they not please tell me how they care for them, or if they care for them at all, on the Sabbath? Only do not suggest dividing, or the use of a non-swarmers, these methods having been considered and rejected.

After all, I fear this is a question each one must answer for herself. And yet if any sister has a word of advice for one who loves her bees, and yet would fain leave them to themselves one day in seven, will she not kindly speak?

NELLIE LINSWICK.

My good friend Nellie, I am real glad to hear from you again, even though your letter does not tell us much about how you are succeeding with the bees during this year of 1885. It rejoices our hearts, however, to hear that you are striving after righteousness, and that you love the Sabbath-school as well as the bees.

TOBACCO COLUMN.

DEAFNESS CURED BY LEAVING OFF TOBACCO.

WHICH is the worse—tobacco, or not enough poison? I have been using tobacco for the last 25 years, so one day I all at once got the notion that I would quit using it; but, friend Root, you would not believe the success that I had after I quit using it. For the last five years I have been getting deaf. I did not know what to do. My doctor told me that I was not going to get better, and so I was alarmed at the report. I did not know what to do. An old friend of mine, William Kohn, told me that I would have to quit the use of tobacco before I could get well. I quit April 12, 1885, and to-day, June 12, I am in perfect health. Last night I happened to read in GLEANINGS that you will send a smoker to any man who will abandon the use of tobacco. Every man whom I meet on the street I will stop and tell him of my success. William Kohn says if you will send me a smoker he would also subscribe for GLEANINGS, for he says that he likes to deal with men who try to abandon the use of tobacco. I think I have carried a smoker, then, if that is the case.

MATHIAS SCHNEIDER, SR.

Alabaster, Mich., June 12, 1885.



Every boy or girl, under 15 years of age, who writes a letter for this department, CONTAINING SOME VALUABLE FACT, NOT GENERALLY KNOWN, ON BEES OR OTHER MATTERS, will receive one of David Cook's excellent five-cent Sunday-school books. Many of these books contain the same matter that you find in Sunday-school books costing from \$1.00 to \$1.50. If you have had one or more books, give us the names that we may not send the same twice. We have now in stock six different books, as follows, viz: *Sheep Off, The Giant-Killer, The Roby Family, Rescued from Egypt, and Ten Nights in a Bar-Room*. We have also *Our Homes, Part I*, and photograph of our old home-plant, taken a great many years ago. It is a picture of myself, Blue Eyes, and Caddy, and a glimpse of Ernest. We have also some pretty little colored pictures of birds, fruits, flowers, etc., suitable for trading. You can have your choice of any one of the above pictures or books for every letter that gives us some valuable piece of information.

'A chiel's amang ye takin' notes;
An' faith, he'll prent it.'

LITTLE friends, did you ever hear anybody tell about being as uneasy as a fish out of water? I suppose of course you have; and the saying has become so proverbial that no doubt you all—in fact, the world in general—will be greatly surprised when I tell you I have seen fishes out of water, and they were not uneasy either. Yes, great big fishes, almost as big as the cod fish your father brings home from the store. Do you want to know about it? Well, yesterday, when I got tired, and my brains felt sort o' muddled up, I got away outdoors. I went down through the apiary where 400 hives of bees were rolling in the clover honey. Then I went through the peas to see if they were large enough to pick. Then I helped the lima beans climb up their poles where they could not quite reach them. Then I pulled up some lettuce. We have a great lot of it, and it will not sell now, on account of strawberries being five cents a quart; so I gave some of it to the Jersey cow. She seemed to think it very good, and would probably have eaten the whole of it if Mr. Somers did not give her so many other nice things to eat every day. Well, the carp-pond is right near the Jersey cow, and this same carp-pond always rests me better than almost any thing else. Mr. Somers had mowed the grass nicely along the steep bank on the north side, so it was pleasant and cool down there, and I stepped along very carefully to see if I could not catch the carp at some of their tricks, without their hearing me.

Pretty soon I heard an awful splashing. It sounded as if a small pig were rooting around, making the water splash. You may be sure I dropped down close to the ground, and crawled up on my hands and feet; and I was rewarded by seeing a great whopping fish out of the water, and not un-

easy either. He was up among the roots of grass, nosing and rooting about like a pig. His tail was partly in the water some of the time; but as he squirmed around a good part of the time he could be said to be, truthfully, to all intents and purposes, out of the water. Pretty soon he, with a dextrous flop of his tail, slid back into the pond again, and then went prowling along with his great fins sticking clear above the surface. Pretty soon he backed up and shot forward with such force that he came clear up on the grass in another place. After digging around in the grass roots as before, making quite a chanking and blowing, he flopped back in again. This he repeated clear around the north edge of the pond, coming up every three or four feet.

The grass and water-plants along this edge are growing very luxuriantly, for it is a sort of sandy loam, and these succulent roots seem to be what the fish are fond of. Before he got around, a smaller fish attempted to do the same thing, but he could not manage it so well. The sight was so wonderful and astonishing to me that it almost made my hair stand on end. The beauty of the sight, as his gorgeous scales glistened in the sunbeams, showing different colors as he twisted about, was beyond any thing I can describe, and his motions seemed natural and graceful—quite different from that of frightened fish when we pull them out on the grass. I wonder if the rest of you enjoy such sights of nature as these as I do. Why, it seems as if these humble creatures, studied when they are not aware that any eye is upon them, were almost enough to give us glimpses beyond the veil that separates us from the unrevealed world beyond. It seems to me as though I were catching glimpses of the great Father, by studying his creatures. Sometimes these great fish came up and gazed back at me, as if they, too, wondered what we were for and where we were tending.

As I started back to the office to take up my work again, my heart was filled with praise and thanksgiving—yes, thanks for the fish as well as for the bees. Now, then, what have you to tell me this month in your little letters?

CARP AND BEES.

We have a carp-pond that covers 1½ acres of ground; we have 500 large carp in it, and 170 small carp. Pa paid \$4.00 a hundred for them. We lost 15 swarms of bees last winter, and we have 8 left now, 6 very weak.

MARY E. COOK.

Manfield, Ohio, May 12, 1885.

HOW TO MAKE A CHEAP OIL, TO BURN IN A LANTERN.

To make signal oil. Take two qts. of lard oil and add one quart of coal oil. Signal oil is used to burn in lanterns. If this is worth a book, send me *Our Homes*, part second.

JOHN CRAIG, age 13.

Armstrong, Kan.

I suppose the above would do for some kinds of lanterns, John; but as most of the lanterns nowadays are made to burn coal oil, or kerosene, I should think so much lard oil wouldn't work very well. Besides, lard oil is quite expensive.

A STRING OF LETTERS FROM THE LINK CHILDREN, AGED 12, 10, 8, AND 6 YEARS RESPECTIVELY.

CARRIE'S LETTER.

My pa keeps bees. We had four months of day school, and I am going to Sabbath-school. We got one of your extractors, and a bee-brush and a honey-knife. We like them very much. We take GLEANINGS, and I like to read the little letters. I like honey very much, but I don't like to get stung by the bees. My pa makes his own hives.

Preston, Minn., Mar. 6, 1885. CARRIE LINK, age 12.

BARBARA'S LETTER.

My pa keeps bees; he has 37 stands in the cellar now. We extracted about 180 pounds. I like honey. I have four sisters and two brothers. My ma hives the bees sometimes when pa is not at home. The bees sting me sometimes. I go to Sunday-school. I read in the Third Reader. We have the hives standing in the garden, under the apple-trees; the apples fall on the hives, and the bees fly out and get mad.

BARBARA LINK, age 10.

HENRY'S LETTER.

I saw the other little boys and girls writing letters to you so I thought I would. I go to day school and to Sabbath-school. I read in the Third Reader. We have about 400 lbs. of box honey.

HENRY W. LINK, age 8.

SARAH'S LETTER.

I like honey, but I don't like to be stung. I go to day school. I read in the First Reader, and I go to Sunday-school. We did not get much honey last year. We got only 165 boxes from 65 hives.

SARAH LINK, age 6.

FREDDIE'S LETTER.

My papa has bees. I like honey. Papa takes GLEANINGS. I like to have papa read the little letters. I go to school, and when I come home I bring the cows for my papa. I like to see my brother work with the bees; he looks so funny with his hat and veil on. I should like to see your fish-pond.

Stottville, N. Y. FREDDIE W. ENGEL, age 7.

LENNIE'S LETTER.

My papa has 10 swarms of bees, and they are doing well. Mr. Root, I am a cold-water boy. Do you think I write well enough to have Ten Nights in a Bar-Room?

LENNIE F. GREEN, age 10.

North Newburg, Mich.

Yes, Lennie, you write a very nice hand. The letters are all very plain, and the words are all properly spelled.

HOW CAREY'S FOLKS MADE A BOAT.

Our bees are doing well. We have three hives of Italians. We like GLEANINGS very much. We have a boat. We got a pine log and cut it out, then pitched it. We have much fun riding in it. We are thinking about making a carp-pond. The way we hive bees is to get a light box with a lid, and put it under them, and take an ax, if the limb is low, and shake them off.

CAREY TAPLEY.

Columbus, Miss., Feb. 28, 1885.

41 IN THE FALL, AND 40 IN THE SPRING.

My brother keeps bees. Last fall he put 41 colonies into the cellar, and came out in the spring with 40, although the temperature often went down to 24 degrees below zero. Our bees are mostly Italians. In the spring of 1884 we had 20 colonies, and increased to 41 and got about a ton of extracted and comb honey. The most of our honey comes from alsike

clover and basswood. Last fall the bees gathered a lot of honey-dew. We had to take this from them and give them syrup instead. We use the Simplicity hive.

HERB. SHIPMAN, age 13.

Cannington, Ont., Can., June 24, 1885.

ADELE'S REPORT.

I will tell you about pa's bees. He had three stands last spring, 7 in the fall, which he had to feed, except two, and did not get much honey. Now they are all dead except one. He took the black queens from three, and put in Italian swarms; but one would not stay with the black ones. One died, and one he has yet. The hive is nearly full yet.

ADELE SIEFKER, age 8.

Campbellton, Mo.

WHAT THEY HAVE GOT NEW AT LEE'S HOUSE, JUST AS HE WROTE IT.

WE HAVE GOT A LITTLE CALF AND SIX PIGS. WE ARE WELL. I AM SIX YEARS OLD.

BROOKSTON, TEX.

LEE FITZGERLED.

There, now, Lee, we have got a little new calf at our house too. It belongs to the Jersey bossy, and I tell you but it is a nice one. I told my wife, that just taking a good look into that calf's eyes, when I was tired of reading letters, was worth more to me than a doctor's prescription. But, is not our Jersey cow proud of her calf, though? You are ahead of us on pigs, Lee; but we have got four little rabbits, and, oh my! but aren't they cute and funny? They have got big enough now so that their mamma goes off a long way and leaves them to keep house all alone.

HOW TO GROW A CALADIUM ESCULENTUM.

Mother keeps bees. She has 18 colonies, all booming except two. I am writing under a shade tree and watching the bees. I will tell you how mother grows the *Caladium esculentum*. She makes a place about 2½ feet across and one foot deep, fills it up with good rich earth, and manure from the cow-yard; gives it plenty of water all the time except when it is raining. She gets her plants and bulbs from James Vick, of Rochester, N. Y. When the caladium is well supplied with water, little drops of water as clear as crystal drop from the point of the leaf. If this is of any value, please send a picture of the house apiary.

MARY F. PIERSON.

Kellerville, Ill., June 24, 1885.

To be sure, your letter is worth a book, my little friend Mary. If the plant you mention is the one that always has water dripping from its leaves, it is the plant I want just now. I have hunted over my catalogues to find out more about it, and I want one right off this season, if it is not too late. I will write to Mr. Vick to-day.

AN APIARY OF 250 HIVES.

Papa has 250 stands of bees. They are mostly Italians. I have two stands. I help work. Papa has some Holy-Land bees. I like the Italians the best. Papa has one stand of bees where he put a cell in a cage, and the cage in the hive. He forgot it, and left it there 20 days, and when he went back the queen looked as nice as any queen. He turned her loose, and the next time he went back the combs were laid full.

MINA WOLFE, age 11.

Lathrop, Cal., June 7, 1885.

Friend Mina, you have given us quite an important fact. Of course, we do not know

when the queen hatched out: but she might have been in the cell, say five days: but even then she was 15 days old when your father let her out, and I know that queens do sometimes commence to lay after they are between two and three weeks old, though ours usually lay at about ten days.

PHARES' LETTER.

My pa keeps bees. They commence working about February on the water-elm and willow. By the first of May the whole prairie for miles is covered with flowers. There is a kind of blue flower we call buffalo clover that the bees work on, and old maid, and horsemint, by the acres, all over the prairie. My brother and I go to school. I plowed this year for the first time in my life. I have a cow and a calf, and a shoat. My cow is only two years old. That is all the property that I have.

PHARES A. ROBERTS.

Brandon, Texas, June 28, 1885.

Friend Phares, do you mean that you have a flower that grows on the prairie, called "old maid"? If so, I do not think it is a very genteel name, and I would suggest that you have a better name for it. The term is a term of disrespect, a good deal out of date, and I think it would be a good thing to drop it for ever.

JOHNNIE ELBERT, HENRY AUGUSTUS, AND THE REST OF THEM.

I live on Wallace Prairie. We moved here about two years ago. We do not live far from the creek, and sometimes I go a fishing, but catch nothing but minnies, so I do not go often. My brother is taking GLEANINGS. He has 16 colonies of bees, and my sister has two colonies. I have two sisters and three big brothers and a pair of twin brothers that will be two years old Christmas day. Their names are Johnnie Elbert and Harry Augustus. Sometimes they go out where the bees are, and throw sticks at the hives and they get stung. Yesterday Johnnie E. and Henry A. were playing in the yard, and a bee stung Johnnie E. on the lip, and it was swollen so big last night that he could see out of but one eye. One day I went out where the bees were and saw both babies in the bee-house. There is a log hive with a hole in the side, and the comb was sticking out of the hive, and the babies were trying to pull the comb off, but the bees did not sting them before I got there.

I have not many flowers this year. I milk every morning but Sunday morning, and then I cook breakfast.

ROSALIE SOMERFORD, age 11.

Navasota, Texas.

LILLIAN'S LETTER.

I thought I would write you a few lines, and tell you about the bees. There is a honey-bee making a nest at the side of our door. One of grandpa Stephens' hives of bees swarmed on Sunday, and I got stung five times. The queen was killed, and the bees were awful cross. Well, I must close. If you think this letter is worth a picture, please send me one of a bird.

LILLIAN M. STEPHENS.

Blairsville, Pa., June 28, 1885.

Yes, Lillian, your letter is worth a picture; but will you excuse me for telling you and the rest of the little folks that you have two sentences in your letter that occupy space and do not tell us any thing we did not know before? The first sentence is the one

you start out with. Instead of saying you thought you would write a letter, just go on and write it, for we all know, without being told, that you must have thought of it or you never could have written it. The other is that sentence at the end, where you say, "I must close." If you had just closed without saying it, we should have known it all the same. I have crossed out such expressions in a great part of the letters that come, and should have crossed that out in your letter, had it not occurred to me to give you a word of caution about it, for your letter contains two of these sentences, as you see.

ARTIFICIAL HONEY.

Take soft water, 4 lbs.; white and brown sugar, moist, 20 lbs.; pure bees' honey, 3 lbs.; cream tartar, 80 grains, essence of roses, 24 drops. Mix the above in a brass kettle, boil over a charcoal fire five minutes, take it off, add the white of two well-beaten eggs. When almost cold, add 2 lbs. more of bees' honey. A pint of the decoction of slippery-elm bark, of the consistency of cream, will improve the honey, if it be added by cooling. The above will make 35 lbs. of pure honey, equal in every respect to bees', and at about one-third of the cost. If made for family use, only a small quantity need be made at a time. Keep it in a cool place.

JOHN ELLIS, age 10.

Armstrong, Kan., June 29, 1885.

I suppose, John, you copied your recipe out of a book, and very likely it is good, although I have never tried it. If I am correct, it is the very same recipe that our friend H. H. Lake, of Lavansville, Pa., used to sell for two dollars; and at the same time he was selling it for two dollars, it was published in Dr. Chase's recipe-book. Slippery-elm will do very well for present use; but if you try to keep it, it will induce fermentation in hot weather. John, do you mean to say it is equal in every respect to the honey made by the bees because you have tried it, and used it at home, or because the book said so out of which you copied it? Our little friends should be very careful to give credit when they copy any thing—that is, do not copy any thing from print and let it pass as your own. Among book-men and newspaper-men this kind of work is considered a pretty serious charge.

JOHN'S REPORT.

I will let you know about the bees. They can gather much honey. The linn-trees are full of blossoms, and the buckwheat is ready to get blossoms from, and there is much clover where they can get much honey. We had three swarms, and lost one. We have not taken any honey yet, but we shall some day this week. We got them double boxes, and pretty full of honey. We have two pretty good queens.

A swarm of bees in May is worth a load of hay;

A swarm in June is worth a silver spoon;

A swarm in July is not worth a fly.

JOHN J. SCHWARTZ, age 13.

Berne, Ind., June 29, 1885.

Why, John, you don't mean the linn-trees and the buckwheat are in blossom at about the same time out where you live, do you? We don't have buckwheat in bloom here until the linn is past and gone a long while.

The little verse at the end of your letter is rather behind the times. We think a swarm of bees in July is worth more than a silver spoon, and sometimes as much as half a load of hay, any way.

SAMUEL'S REPORT FROM RATTLESNAKE APIARY.

I am 12 years old, and have helped my pa with his bees for four years. I have requested my pa many times to write to you our experience with bees, but he will not write except on business. In the spring of 1881 we had 5 colonies of bees in box hives. With the help and instructions of a good neighbor (Mr. Fox) we transferred to Root Simplicity. The spring of 1882 found us in Blasted Hopes. We had but two weak colonies left, and not more than a pint of bees in each one. The year 1882 proved to be a good honey year. From early spring until November our bees were on a constant boom. We found two bee-trees, caught a swarm, bought two swarms, and went into winter quarters with 16 colonies—two weak ones.

The year 1883 was a very poor year. From 16 we increased to 34, and had some honey for home consumption. Last year, 1884, was a very poor honey year. We increased by natural swarming from 34 to 71, and got about 3000 lbs. nice comb honey in supers. In wintering we lost four colonies by carelessness; sold four for \$5.00 each; have increased this spring to 93; bees still swarming, and bringing in honey fast from horsemint.

Pa received the Novice extractor you expressed to him a few days ago. Express charges, \$3.10. Cost of extractor, \$10.20.

With your permission, Uncle Amos (if you will allow me to call you uncle), I will write again and tell the juveniles of our Rattlesnake Apiary, located eight miles west of here, in a rich prairie-valley-bottom black-land country, a natural flower-garden. Pa sends respects and many thanks.

Jones Prairie, Tex.

SAM'L H. TERRAL.

Thank you, Samuel, for writing when your papa was so busy and wouldn't. We shall be very glad to hear from Rattlesnake Apiary; but I presume some of the other children besides myself might like to know why "*Rattlesnake* apiary."—Your natural-flower garden I should think would be just the place for the bees.

THE MISHAP THAT CHARLIE'S FATHER MET IN TAKING DOWN A SWARM OF BEES.

My pa does not keep bees, but his little boy does. He has 70 colonies. He lost 25 this spring; had 45 packed in chaff; lost only one of those. Pa's boy thinks he will not get much clover honey this year, because there are hardly any blossoms. Last year he had a big lot of it. I like honey, and bees too, when they don't sting. One time there was a great big flock of them alighted away up in the top of a big apple-tree. There was as much as a painful of 'em. He got a great long ladder and stood on the top of it, and had to stretch himself away up to reach them. The limb on which they were broke, and the bees came down all over him. They crawled into his hair and stung him on the face and neck, as many as five hundred or more. Sister said you could not put the point of a pin down (may be she meant head instead of point) without hitting a sting. Any way, I guess they were about as close as they could be and be healthy. It did not swell much, but his head and neck were sore for two or

three days. I think foundation in comb honey is nice, because you can have a lot of wax to chew as gum. I think if Mr. Hutchinson were here with his honey he would have to ship it to more than *one* fair and back home before it would become soft and mellow enough for the people to buy.

CHAS. OLIVER, age 13.

Springboro, Pa., June 23, 1885.

LIZZIE'S HEN'S-NEST DIVISION-BOARD.

I see you are interested in the poultry business as well as the bee business. Well, so am I. I am partner in the poultry business with mamma, and the bees with papa. I have had a good laugh at your expense. This is where the laugh comes in: I see in your juvenile department about those two old hens on one nest. I will now tell you the way mamma and I do when two hens want to sit on the same nest. We just simply put a division-board between them, no matter if it is only high enough to keep them from mixing their eggs. I have concluded that, if you had been as well posted in the hen-sitting business as you are in the bee business, you would not have forgotten that division-board. You have heard the old saying, that two women can never agree in the same house.

Now about those nasty, dirty eggs. That poor old hen might just as well have had a nice lot of little downy chicks as not, if you had just taken a basin of warm water and washed those eggs and put some clean straw in the nest. That is the way we do. I should like to have you try these plans and report. Now about the bees.

There have been heavy losses about here, but we went into winter quarters with 12 stands of bees and honey; lost one colony, and the rest came out in good condition. We have had four new swarms this spring. Papa wants to know what you would do with two swarms in the air at once. This is what he did: He just flew or run around and got both swarms into their new home with very little trouble. He says that is thanks to clipped queens. He says when both those swarms came out it made him feel like the man who said, when his bees run away, that five dollars in the hand was forty dollars in the air.

This is my last letter before I am 15, so I should like to have that picture of your old apiary.

Pada, Ill., June 22, 1885.

LIZZIE BARNES.

Well, I declare, Lizzie, I have heard of division-boards for bee-hives, lots and lots of times; but I do not believe I ever heard before of a hen's nest with a division-board in it. Since you mention it, it seems to me the idea is just good common sense, but I never thought of it at all. Only last week two hens wanted to sit on the same nest again, and I will tell you how I fixed them. I just "swarmed" them "artificially." You see, they were both in a barrel. Well, I took one hen off the nest; then I just handed the barrel over the fence to Ernest, and set another barrel just like it in the place occupied by the old barrel. The hen that had her nest in the old barrel stuck right to it, of course, and t'other hen just walked right into the new barrel, of course.—Two or three of the juveniles have told about washing the eggs off; but, dear me! I have too little time to wash off many hens' eggs. I guess I will get Blue Eyes to boss the poultry-yard. No doubt she would beat me all to pieces.

OUR HOMES.

Whatsoever ye do, do all to the glory of God.—
I. Cor. 10: 31.

MR. ROOT:—My dealing with you, although small, is a surprise to me and to others, my neighbors. If a man can hardly trust his friends, how can he trust strangers?

It is a study to me to know whether you are by nature an honest man, or has religion made you so? or is it policy, or all? According to my experience, people belonging to the church will bear watching. You have won my confidence, any way. I believe nature made you an honest man, and I wish there were more like you. MARION BROWN.

Sebewa, Ionia Co., Mich.

No doubt many of the friends will think it a little singular that I have chosen such a letter as the above to start *Our Homes* with; and, in fact, many may think it singular that I should publish the letter at all, as it plainly was not intended for publication. I have taken the liberty to print it, however, because it so plainly strikes at the point I wish to talk about; viz., why are you honest? or, if you choose, why do you try to be honest? Why does anybody try to be honest? I thank the writer for his very kind words, and for his good opinion of us here, and his kind compliment to our business methods; and I only hope he may have charity sufficient to overlook our faults and failings, which he will be sure to find, should he continue to have dealings with us. It is quite evident that he has seen something in our business methods that attracted him and pleased him. Perhaps it is our custom of notifying all our patrons promptly and repeatedly, if need be, of any little balance there may be belonging to them on our books. It does not matter very much, any way, only I believe he is right thus far, that he has found us just as anxious to pay over any little balance remaining as we would be to get any little balance remaining that was due us; at least, I have tried for years to throw out self in all our business managements; but I know I have failed sadly many times, for I have looked back afterward and seen the effects of selfishness.

Now, then, the question, Does religion make a man more honest? or, if you choose, *ought* religion to make a man more honest? What good comes of being honest? Even the juveniles might say that honesty is the best policy. Everybody repeats this little maxim, and everybody believes it in the abstract; still very few of us believe it in practical life, else why are we not more honest than we are? Our faith is evidently a narrow and contracted faith. We mean in the abstract to be right, fair, and honest; yet at the same time self-interest warps our faith in the belief that honesty is always the best policy. Well, suppose you should be thoroughly convinced that honesty is the most profitable, would the motive be a very commendable one? A sharper proposes to be honest when he is clearly satisfied that it will be the best policy to be so; and yet nobody admires or respects a sharper. Our friend says that he believes nature made me

an honest man. I hope it is true, that God implanted in my heart a love for fairness and fair dealing; and I know, too, that my father and mother taught me carefully to be honest and true. But, granting this, have there been any struggles, any conflicts, as you might say, in my heart in regard to this matter? Was I born with such a love for honesty and fair dealing that, together with the teachings of my parents, it became easier and pleasanter for me to be honest than to be dishonest? In one sense I might say yes, and in another *no*—*emphatically no*.

Before I go any further I want to say that our friend has taken myself for an *illustration*, and there are some reasons why I prefer to use *myself* as an illustration. I know the workings of my own heart, but do not know the inner life of any other human heart. Furthermore, I do not for a minute believe that I average better than the common run of humanity. If I did, it would be a rather sad, sad world. God has implanted in the hearts of every one of us a love for truth; but without encouraging this love, without careful training, and the benefit of Christian friends, I very much doubt if any human being would be honest and true. A very bad boy might be made a good man, by careful training and teaching. I think most of you will assent to this. A good boy can also become a very wicked man, under the influence of bad surroundings. I think you will all assent to this. It follows, then, that the natural disposition has not very much to do with it; at least, I do not think it has *very* much. I have watched the matter for a great part of my life; and the more I observed, the more I felt satisfied that a human being becomes good or bad, at least very largely, under the influences of his surroundings. Plenty of money, nothing to do, evil associates, and where is the boy that will be good and true in spite of them?

I have often looked back to my childhood, as far as I can by the light of memory, to see if I could discover when bad impulses came in. When I was quite a small child I had quite a reputation for truthfulness; but for all that, I had not very much conscience. I was free from many of the vices of other children, because there was no inclination that way. I believe I always liked work, so there is no particular credit due me because I was industrious, and worked hard to earn what money I wanted. That is, I respected the rights of others pretty well until a temptation sufficiently strong came before me.

The first glaring piece of dishonesty that I can remember was when I was a juvenile, keeping poultry. A kind miller near by said if I would sweep out the mill I might have the sweepings of the floor. He evidently considered me honest, or he would not have made such a proposition. I was expected to sweep the mill all over, and so went away up in the third story, where the miller seldom came. Now, in sweeping, many times I came pretty near heaps of grain as well as heaps of ground feed, and different kinds of stuff. I was all alone; and if some of this feed were mixed up with the dust of the floor no one would know it.

I was very anxious to make my poultry venture a success. I was raking and scraping every thing to feed my "biddies." I am sorry to say that I got into a way of letting my broom brush into the edge of the feed in a way that I would not have *thought of doing* had the miller's eyes been upon me. I had got the poultry fever, and was full of enthusiasm, and I listened to the voice of the tempter under circumstances when I would not have done it otherwise. It pains me to speak of this; but the question my friend propounds some way seems to make it necessary, to bring it out. I can not remember that I was ever discovered in this little bit of theft. It amounted to only a few cents, it is true; but it was a start in dishonesty.

Not long after, I wanted to buy some corn of my father to carry my poultry through the winter. Of course, my father let me go to the corn-crib and measure it out myself. He was away from home, and I had charge of every thing, and of course no one knew what sort of measure I gave myself. Well, I got into a habit of measuring up a bigger bushel of ears of corn than I ought to have done; bigger, in fact, than they would have been had my father been around where he might have seen my heaped-up bushels. You may say this was only a small matter; that my father should have given me what corn I wanted for my poultry. Even if this were true, it was dishonest in me to take more than a *fair, just* bushel. I can remember distinctly how these experiences hurt and crippled me.

Not long after, I took my younger brother to the mill one day, that I might please him by a sight of the great wheels going around. I wanted to show him the great water-wheel; but to do so a little door had to be opened. I did not know whether I ought to open it without asking leave or not, but I took the chances. One of the hinges was broken; and when I unhooked the door it fell down so as to drag on the water-wheel. I slipped away; and when the miller came around, I either pretended or told him outright I did not touch it. You see how easily one sin follows after another. I did remember that my younger brother was a witness to my untruthfulness, and it troubled me some. At this very time I was learning verses from the Bible, in the Sunday-school. My mother talked to me over and over again in regard to the practical application of these Scripture texts. She told me that God saw, even if nobody else did. She did not know about the sweepings in the mill, nor the heaped-up bushels; but I did, and it did not take me long to connect the two. If there *was* a God—an *all-seeing* God, as she and the Bible taught—he looked on, even if the miller and my father did not. Then the question arises, Is there truly a God, and does he look down and see all these things, or is this only all a myth?

We lived in a community composed largely of infidels and skeptics. The teachings of these infidel men would be, that it was all a myth, and that I did not need to trouble or worry myself about these trifling dishonest tricks I have mentioned. My friend, where do *you* think safety lay—with my mother

and the Sunday-school, or with these men that talked "modern science" and *no* personal God? Of course I can not say positively that other children are influenced in their actions as I was by these teachings; but all along those years, and clear up through my teens, I was vacillating between the God of my fathers and the teachings of modern skepticism. At times I accepted my mother's teachings, and I used to have a little prayer to say at night before I went to sleep. The little prayer is the same one that we furnish free of charge on the little printed cards we give away. When I went through the day striving to do right, it was a pleasure to me to repeat this prayer before going to sleep. When in my zeal to make my poultry or something else prosper, I yielded to temptation, and was dishonest, I felt like skipping my little prayer, and I either said it mechanically, without either thinking or caring what the words meant, or I omitted it entirely. Sometimes for long months the prayer was dropped and forgotten; but again, when I felt bad, or got into trouble, I would go back to my little prayer, and may be stick to it for weeks or even months. If it is indeed true, that children are influenced by little things like these, how very important is it that they be watched and looked after! Can any thing atone for a parent's neglect? Fathers and mothers whose eyes are on these pages, do you not know that it is not only possible but highly probable that your boy or your girl is even now subject to temptations, such as I have mentioned? May be a little talk about God the Father, and a few Scripture texts reminding them of that all-seeing Eye, may strike just in time to save from a wrong act, and, may be, save a soul as well.

Well, I went on through life until I was about 35 years old, in much after the fashion I have narrated. Sometimes I accepted Christ as the Savior, and sometimes I did not. In using the word "accepted" I mean that I decided in my own mind that I accepted him as the Savior of the world, but did not make any public acknowledgment. During these 35 years of my life I reserved the privilege of accepting or rejecting, as circumstances might make it convenient; for if I said nothing to anybody about it, no one could call me inconsistent. Of course, I *myself* saw my own inconsistency; but as long as nobody else saw it, it was not much matter, *especially* if I decided it was all a myth any way. When I became a man, of course temptations of a different sort presented themselves; but it did not take me very long to decide, as perhaps the world at large decides—at least on general principles—that honesty is the best policy, so I always paid my debts, and as a rule kept my promises. I am ashamed to own it, but my life was in some sense like goods in the hand of an auctioneer—I was prepared to sell it to the highest bidder. If Satan had any thing in store sufficiently attractive, why, then I would accept Satan; if religion or any thing of that sort had something to present that I liked better than any of Satan's wares, why, common prudence would dictate that I should become a Christian. It was all self

and selfishness. I did not propose to give up self for anybody or any thing; nor did I propose to let go of any of my privileges. I wanted freedom—freedom to do right or freedom to do wrong; freedom to commit crime, to put it plainly, whenever it should become very much of an object for me to commit crime. You may think this is a hard way of talking. I admit it. You may say, too, "God have pity on such a specimen of a man as you used to be." I say amen to that too; and may God in his infinite mercy have pity on any who are in the toils of sin.

Now, then, dear friends, what effect did becoming a Christian have on my life? What effect *ought* a profession of Christianity to have on any man's life? Why, it had this effect on my life. I can express it better by a little text than by any words of my own, although at the time I decided to accept Christ and become a Christian. I had not noticed the text, which is this:

Thou shalt love the Lord thy God with all thy heart, and with all thy soul, and with all thy mind, and with all thy strength; and thy neighbor as thyself.

This I resolved to do before men, and I resolved to do it before God. Some of you may remember that it was while I was alone by myself—no human eye near. I just knelt down alone and told God what I had resolved to do, and asked his help, and received a promise of help there on the spot. Now, do not misunderstand me, and do not criticise me too severely, when I tell you that, from that moment to this, I have never once had a thought of turning back and rejecting God. I have met temptations, and sometimes sore ones. Sometimes I have given way to temptations, and acted in a very unchristianlike way—in a way that many would say, "A pretty specimen you are, for a Christian!" But at the time I had no deliberate purpose of letting go my religion, or of turning back from the resolution I have spoken of. Just one illustration: Sometimes when stirred up it seemed to me to be a Christian duty to give somebody a piece of my mind, and, of course, when I got started I said more and went further than I had intended to. I afterward saw my mistake, and asked God's forgiveness, and oftentimes asked forgiveness of the one I had spoken to with too much harshness. Instead of a deliberate sin it was a mistake, and God taught me to avoid such mistakes in future by resolving to wait an hour, or even twenty-four hours, if the case seemed to demand it, before administering the reproof that I knew it was my duty to administer. You see, I grew in the Christian graces, and every Christian ought to grow every year of his life.

In the above illustration you can see there was no deliberate purpose of disobeying God; but I committed a sin nevertheless, by acting hastily and without wisdom. Christians oftentimes commit sin by *dallying* with temptations. They sin because they do not turn resolutely and promptly away from evil. This is almost unavoidable because we are human. "He knoweth our frame, that we are but dust." Well, a Christian ought to learn to overcome selfishness in the same way he overcomes an evil temper—choke it

down at the outset; therefore he should improve in honesty.

Let us emphasize a little the importance of standing up before men when you decide to accept Christ. It seems to me it is not in the power of any human being to stand safe and sure without confessing Christ before men. The first thing to do is to tell God of your decision, and then straight afterward tell the world of this resolution. It does not amount to any thing unless you confess Christ publicly. The best way of doing this, as it seems to me, is to unite with any body of Christians near you. You know, Jesus told the lawyer that, after loving God with all his soul and strength, he must love his neighbor. You can not very well love your neighbor without his knowing it. God wants to be honored; and to love him with all your mind and strength, without saying a word to anybody, would be dishonoring him. It would be equivalent to being ashamed of him. Ashamed of Jesus! why, the thought is in itself awful. Now, then, after you have made this public profession you must be honest or you will straightway be branded as a hypocrite, and so you ought to be. Friend Brown says, "According to my experience, people belonging to the church will bear watching." That is right; by all means, watch Christians. Why, I love to be watched. I want you to count, measure, and weigh every thing you buy of me. I want you to find fault, and complain. I want you to say, "Mr. Root, is this Christianlike?" I want you to say, "We be brethren." I want you to quote texts, pound it into me, straighten me up, and let us all straighten each other up. If some brother in his zeal strives to get a mote out of your eye when it seems to you he has already got a beam in his own eye, take it smilingly and lovingly, for he is a brother notwithstanding. Christ died for him. Peter says:

What glory is it, if, when ye be buffeted for your faults, ye shall take it patiently? but if, when ye do well, and suffer for it, ye take it patiently, this is acceptable with God.

"Acceptable with God!" To be sure, it is. The friends have accused me of mixing religion and business. Why, the trouble is I have not mixed them half enough—that is, practical religion. As well might one object to mixing honesty with business. Did you ever hear of a man mixing too much honesty and truthfulness with his business transactions? Why, no; surely not.

Not very long ago I had a talk in regard to the expression, "For Christ's sake." Now suppose, when somebody asks you why you are honest, instead of saying, "Because honesty is the best policy," say, "I am honest for Christ's sake." One of the friends said a few months ago, that he did not give up tobacco because he wanted a smoker, nor because he thought it hurt him, but he stopped using it "for Christ's sake." How does that sound, friends? Is it not a little more worthy of sensible and rational beings, than to say, "I am honest because honesty is the best policy"? or "because I make more friends by it, save more money, win a great name, make people look and stare, and say, 'How wonderfully honest he is!'"?

Suppose you simply say, "I am honest for Christ's sake;" and after having said it, suppose you go on doing right for Christ's sake; wouldn't you feel better about it? In the 25th chapter of Matthew, you remember that Jesus tells us about the people who ministered to him when he was hungry, gave him drink, took him in when he was a stranger, clothed him, visited him when he was in prison. These people did this without thinking about the motive, but they did it for his sake; and he closes by saying, "Verily I say unto you, inasmuch as ye have done it unto one of the least of these my brethren, ye have done it unto me." We should be honest because we love our fellow-men; and as we love truth and justice, we love to see everybody have what is fairly his own. Well, in giving these fellow-travelers around us what is their own, we are giving Christ Jesus what is his own. Did you ever think of it, friends?—when we cheat a man we cheat Jesus the Savior. No matter who it is, nor how obscure, no matter how helpless, if you wrong one who can not maintain his rights, you wrong the Savior himself. His words are, "Unto one of the least of these my brethren." Jesus was the Son of man. He was born as we are born, and claims all humanity as brothers and sisters. If we wrong one of them we wrong him. If you are fair and honorable with all of them, you are fair and honorable to him, to God the Creator of the universe, he who sees with that all-seeing Eye, and who looks down upon the various trifles of our every-day lives. Why, then, should we be honest? Because we get along better, and make more money? No, no; not for such a reason, but because of love to God, and love to our fellow-men. While I go over these thoughts, my own conscience lashes me. Why have I not held better to my teachings? And again wells up that old prayer of my heart, "Lord, help! Lord, help!" Help me to glorify thy name by making all my business deal more in accordance with these Home Papers. Help me to constantly feel that it is for Christ's sake; that it is to Christ I am looking, and for the sake of Christ that I am buying and selling, and doing business. And help me, O Lord, to remember the sacredness of my position; and help me, even when I am writing these Home Papers, that they may all be written for his sake.

Now, then, what kind of help do we want? Do we want boys and girls who are working to please their employers, or who are working to please Christ? Shall a man be faithful because he thinks his employer's eyes will go over his work, or because he knows his employer's eyes are upon him? or shall he work faithfully because he feels that God's eye is upon him? What motive do we want to hold up before our children for being faithful? Shall we tell them that dishonesty is sure to be found out, sooner or later? or shall we teach them that God sees it the moment it is done? Which are best—those who work for love to God and their fellow-men, or those who work without any God about it? Friend Brown, my answer to your question would be, that making a

Christian of a man makes him honest, most assuredly; and no matter how bad a man he may be, or may have been, if you can induce him to accept Christ, and to live for Christ's sake, he is not only a saved man, but he is an honest man.

Blessed is the man that walketh not in the counsel of the ungodly, nor standeth in the way of sinners, nor sitteth in the seat of the scornful. But his delight is in the law of the Lord; and in his law doth he meditate day and night. And he shall be like a tree planted by the rivers of water, that bringeth forth his fruit in season; his leaf also shall not wither; and whatsoever he doeth shall prosper.—PSALM 1:1-3.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,
EDITOR AND PUBLISHER,
MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, JULY 15, 1885.

Thou God see't me.—GEN. 16:13.

DISCOUNT ON FOUNDATION AND SECTIONS.

TEN per cent off from list prices on fdn., as given last month, and also 5 per cent off on sections for the rest of the season.

LONG LETTERS.

At present I am unable to even read all of our correspondence; and if you write very long letters, please bear in mind that all such will probably have to be read and answered by Ernest or some of the clerks.

THE HONEY YIELD UP TO THE PRESENT DATE.

BASSWOOD is yielding bountifully with us, and many reports from different localities seem to indicate the same. Orders for honey-pails, glass receptacles, and other supplies for storage and retailing the crop, are now starting quite a brisk trade.

FINE QUALITY OF THIS SEASON'S HONEY.

As yet we have not heard a word about honey-dew this season; but all of the honey brought in to us has been of excellent quality, both in looks and taste. If it is true, that our surplus during 1885 is to be free from the honey-dew troubles of 1884, we certainly have one thing to be thankful for at least.

A PERIODICAL, AGAINST THE USE OF TOBACCO.

We have received Vol. 1, No. 1, of the *Antidote*, published by the author of the little book called "A Dose of Truth." The paper's motto is, "Ye shall know the truth, and the truth shall make you free." The subscription price is 25 cts. per year. Address the *Antidote* and *Herald of Freedom*, New Florence, Pa.

NEW BEE-JOURNALS; WANT OF COURTESY, ETC.

In my remarks in regard to the above on page 469 of our June 15 number, I did not dream of intimating that the *Canadian Bee-Journal* had been faulty in the way I suggested, but quite the contrary. If Bro. Jones has allowed any thing in his journal that might be considered uncourteous to the journals down here in the States, I had never noticed it when I wrote what I did.

DEATH FROM EATING POISONED HONEY.

SINCE the article on page 445, last issue, was printed, we have received very full and complete reports of the whole matter. Our thanks are due to the postmaster, and Mr. J. G. Postell, who lives near there, as well as the editor of the *Branchville Banner*. It is, a good deal as we expected, considerably exaggerated. In sifting the matter down, there are only three deaths—two negro children and a white boy, and it does not seem to me that the case is very clear that even they died from eating honey, although it is quite probable. We have also received a letter giving very full particulars, from Mrs. Dukes, the mother of the boy who died. He was about eleven years old. Further particulars will be given in our next issue.

THE CANADIAN BEE-JOURNAL.

BRO. JONES still continues to make one of the brightest and most wide awake go-ahead journals published anywhere in the world. In his issue for July 8, in speaking of suitable clothing for students in the apiary, he advises them to singe all the hair from their hands and wrists, as bees are always incited to sting by anything in the shape of hair or fur. I believe the idea is a good one. On another page he mentions that his students discovered they could tell when a colony was likely to send out a swarm soon, by the actions of the bees in front of the hive. Although I do not remember to have seen this subject discussed before in print, from what I have noticed I am inclined to think he is right about this also. The different behavior of the bees will be noticed from an hour to sometimes as much as half a day before the swarm issues.

THE OHIO STATE FAIR.

THE Bee-keepers' Association have an annual meeting on the fair-grounds. There is an especial reason why it is desirable we should rally round the Ohio State Fair this year, and that reason is because they have for the first time decided to run a fair without beer or other intoxicating drinks. Don't let the whisky men say it is a failure. We extract the following from the *Farm and Fireside*:

The Ohio State Fair will be held in Columbus during the week beginning August 1st, and we take this occasion to remind our Ohio readers that the State Board of Agriculture has resolved not to allow the selling on the fair-grounds of intoxicating liquors of any description, malt or alcoholic. This action of the State Board was taken in deference to what was believed to be the wish of a great majority of the agricultural community. It was taken with the earnest intention of making the State Fair a gathering to which every farmer of Ohio might take his wife and daughters, with the assurance that they should not be insulted there by ruffians beastialized by drink.

Moreover, this action was taken in the face of the fact that it would not only insure direct loss of a source of revenue which had previously been a material help in the financial management of the fair, but would also entail a considerable indirect loss by developing the factious opposition of the liquor interests of Columbus and elsewhere.

THE BEE-KEEPER'S HANDY-BOOK.

WE are in receipt of a revised and enlarged edition of the above book. It contains many engravings, and much valuable matter, and seems to be fully up to the present date. Several pages are devoted to reversible frames. Perforated zinc and drone-guards are also considered at length. Altogether, friend Alley has succeeded in giving us a very attractive and useful bee-book; but we think he makes a mistake in setting the price at \$1.50, by

mail postpaid, instead of the usual price of \$1.25 for books of about that size. The book does not contain nearly as many pages as the *A B C* or Prof. Cook's Manual; and besides, the amount of matter is very small on each page, being large type, large margin, and the matter very much spread out. A full page contains about 874 "ems," and a full page of the largest type used in the *A B C* book contains 3330 "ems." We can furnish the new edition at the above price, or the old one for an even dollar, postpaid.

FALSE STATEMENTS IN REGARD TO THE HONEY BUSINESS.

So large an amount of matter has been received in reference to this, together with clippings from newspapers, that it would almost fill an issue of *GLEANINGS*. We shall give the principal part of them next month. The greater part of them come from newspaper reporters who are in search of something sensational. As an illustration: A reporter went to visit a bee-man in Michigan, to write up the honey business. The bee-man was away from home, and the reporter found a large-sized bee-feeder in the back yard where the bees were being fed in the open air. Jumping at conclusions, and filling in so as to make it look as if a big fraud were being perpetrated, he made quite a sensational article, which is being copied everywhere. The gist of this report was, that this bee-man, who had about fifty colonies of bees, kept a shingle out in front of his house, saying, "White-clover honey for sale," while the white-clover honey is all made of glucose fed to the bees in the back yard. *Maybe* the reporter thought he had got the thing about right, but it is pretty evident that he did not care very much whether he was right or not. What he saw was nothing but the usual arrangements for feeding bees out of doors, during a dearth of honey; and there is no ground for deciding that the man was selling sugar or glucose as honey.

SOWING BUCKWHEAT.

Now is the time to put in your buckwheat, if it is not already done. We extract the following from the *American Agriculturist*:

Buckwheat is worth at least seventy-five cents a bushel for feeding, if it is properly fed. It is best ground with corn, as fine as possible, and may be fed with cut hay or straw moistened with water. The seed may be sown early in July. We have found thick seeding the best. At least one bushel per acre should be used. It pays to prepare the ground as well for this crop as for any other, but it is especially useful for the purpose of breaking up an old meadow and preparing it for reseeded. The sod will be well rotted and the soil mellowed and made ready for a fall grain crop, if this is desired, to be followed by the grass seed the next summer. No other crop except peas so well mellow the ground as buckwheat, and this is precisely the effect required in reseeded land. Besides this useful purpose, buckwheat is valuable for its grain. It will easily produce thirty or forty bushels per acre, if well managed, and a bushel of it is worth two bushels of oats of the light sort usually grown, which is largely husk. The crop, too, is put in at times and harvested at times convenient for the farmer.

With us we never get a good crop without sowing phosphate with the buckwheat, by means of an ordinary wheat-drill, with fertilizer attachment. With phosphate we have had a good yield of honey and grain, on ground that would not yield any thing, comparatively, without it. Of course, it may be sown even in our locality as late as the middle of August; but where it is put off so late there is great danger of losing the grain by frost.

FLAT-BOTTOM FOUNDATION.

THE foundation made by our friends J. Van Deusen & Sons, Sprout Brook, Montgomery Co., N. Y., has been before the people a good many years; but of late I can not remember of seeing any reports in regard to it. As we have some customers who prefer it to any other, we keep it in stock. It is perhaps the handsomest and best made foundation of any in the world; and if I am correct, the manufacturers furnish an article with a greater number of square feet per pound than any other make. The only objection is, that it takes bees longer to work it than where the bottom of the cells is made the natural shape. Has further experience demonstrated this last point to be correct? Who will tell us?

EMPLOYING WOMEN FOR CLERKS, BOOK-KEEPERS, ETC.

DID it ever occur to you, that an office where only women are employed must be a pleasant place? No smoking, no swearing, no impure talk; in fact, in our office there is not any talk of any kind, unless it pertains directly to business. Our office is a pleasant place, and I have a great many times thanked God for it—not only because the work pertaining to book-keeping and correspondence has mostly fallen into the hands of women, but because it seems to have drifted, some how or other, with very few exceptions, into the hands of Christian women—for let me tell you it is not every one, even among women, who win a place in the office and keep it. Come to think of it, our business in the different departments is mostly characterized by refinement and courtesy; and while this state of affairs is much due to the influence of the women who are all about us, and in every room, I believe it is more consequent upon the Christian spirit which I trust and believe pervades our business everywhere.

SEALED OR UNSEALED BROOD TO DETERMINE WHETHER OR NOT A QUEEN IS PRESENT.

DID it ever occur to you, that when you tried very hard *not* to make a mistake, you oftentimes make more mistakes than when you do not try so hard. Few things in bee culture have required more emphatic teaching, over and over again, than this one of having *unsealed* brood in every nucleus, when there is any danger that the colony may be queenless. The young larvae take the place of a queen, as it were, and half a pound of bees will adhere to their combs and defend themselves from robbers, providing they have even a little patch of unsealed brood, where without this they would all be demoralized, and become an easy prey to robbers or any other foe. Well, in my editorial in our last issue, p. 467, where I was so very anxious to say *unsealed* brood, by an error the editorial went out with the simple statement that *sealed* brood would answer for starting queen-cells, whereas *sealed* brood amounts to almost nothing; for the little brood that might hatch out, although it would prove a small addition to the little colony, could in no way help furnish the all-important queen. Now remember, it is *unsealed* brood, or small larvae just out of the egg, that we want when we are going to determine whether or not a pound of bees or nucleus contains a queen.

GUARANTEEING SAFE ARRIVAL ON QUEENS AND BEES.

SINCE the traffic in bees and queens has assumed such proportions, the question often comes up as to how much a guarantee covers. Sometimes a cage reaches its destination with some of the bees dead—

the others apparently all right, and the queen all right. Well, suppose the purchaser, under such circumstances, should refuse to receive the package because, according to his notion, it is not in good order. This does not very often happen, but it has happened a few times. Most people acquainted with bees would, for the sake of being human, if nothing else, take the live bees away from the dead and dying at once, and put them into a hive on some combs of food, and, of course, save the queen if possible, and then report to the shipper. Now, I should say, that unless the purchaser does take pains to save the queen, and as many of the bees as he can, he is not entitled to more than enough bees to make up the number that were dead. In regard to queens by mail, the shipper guarantees to deliver them safely at the nearest postoffice. If the purchaser leaves them several days in the post-office, he is not entitled to another queen. In case a queen is received in feeble condition, the purchaser should at once cage her on a comb containing unsealed honey, and place all in a hive of bees, so as to do all in his power to revive her. If she dies, or if she never fully recovers, he should state the case to the shipper, and the shipper should make her good, or furnish another at half price, or arrange it in some such way as would be satisfactory to both parties. If the purchaser does not take the queen from the office, and do all he can at once to save her life, I should say he is in part responsible. If he takes her out of the office, and lays her upon a shelf, or lets her lie until the next day, and she dies, he is entirely or partly responsible for her loss, depending upon circumstances. Queens, like the rest of animated creation, are liable to die at any time; and altogether the safest place for them is in a hive of bees. Therefore as soon as they are received they should, without a single hour's delay, be caged on a comb of honey and brood, and placed in the hive. If circumstances are such that you can not give this immediate attention, I do not think you ought to complain. The shipper simply agrees to deliver the queen in good order at your postoffice.

Every little while some one who is perhaps a little new in the business thinks he ought to have another queen, because his queen was lost in introducing; and he bases his claim on the fact that he followed the printed directions exactly. Whoever purchases a queen ought to be aware that introducing is always more or less risky; and the man who sells the queen can in no case expect to be responsible, unless he advertises to guarantee safe introduction as well as safe arrival. I believe only one queen-breeder has undertaken to do this as yet.

One thing more: Quite a few of the friends have a way of declaring a queen was never fertilized, because she may behave herself somewhat like infertile queens. I want to protest against this, because no man living has any right to say he can tell by a queen's looks or actions whether she is fertilized or not, especially after she has been shipped through the mails. Of course, queens might be caged up and sent off as soon as hatched, and they will live just as long this way as perhaps after they have been laying; but it will be next to impossible to introduce such a queen. The man who would send out *infertile* queens for *untested* queens, would probably pass counterfeit money if he had a chance; therefore when you are purchasing queens, be sure that the man of whom you buy them is honest.

DADANT'S FOUNDATION

is asserted by hundreds of practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sug, most regular in color, evenest, and neatest, of any that is made.

It is kept for sale by Messrs. A. H. Newman, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; Dougherty & McKee, Indianapolis, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Ezra Baer, Dixon, Lee Co., Ill.; E. S. Armstrong, Jerseyville, Ill.; H. Drum, Adelphi, O.; Arthur Todd, Germantown, Philadelphia, Pa.; E. Kretzmer, Coburg, Iowa; E. F. Smith, Smyrna, N. Y.; C. T. Dale, Mortonsville, Ky.; Clark Johnson & Son, Covington, Ky.; King, Aspinwall & Co., 16 Thomas St., New York City; C. A. Graves, Birmingham, O.; M. J. Dickason, Hiawatha, Kan.; J. W. Porter, Charlottesville, Albemarle Co., Va.; E. R. Newcomb, Pleasant Valley, Dutchess Co., N. Y., and numerous other dealers.

Write for samples free, and price list of supplies, accompanied with **150 Complimentary and unsolicited testimonials**, from as many bee-keepers, in 1883. We guarantee every inch of our foundation equal to sample in every respect.

CHAS. DADANT & SON,
Hamilton, Hancock Co., Illinois.

30tfdb

I WILL SELL

From June 15, until Sept. 15, good Italian bees at \$1.25 per pound. Nucleus colonies, 3 frames, L. size, at \$3.25 each. Dollar queens to accompany the above, \$1.00 extra. All my queens are reared from imported stock. Safe arrival and satisfaction guaranteed.

J. M. YOUNG,
Rock Hills, Cass Co., Neb.

13tfdb

Bee-Hives AND Sections!

NEW SHOP AND NEW MACHINERY.

The Largest Manufacturer of Bee-Hives, Sections, etc., in the World.

Our Capacity now is a Carload of Goods Daily.

NOTICE.

By enlarging our factory last year we were put behind with our work so that by spring we were obliged to return many orders. Now we have ample stock ahead, and can fill orders promptly.

Write for our new price list for 1885.

G. B. LEWIS & CO.,

19tfdb WATERTOWN, WISCONSIN.

QUEENS. If you are in a hurry for them, give me an order. Fifty laying now, 90c. each; 6 for \$5.00. Tested, \$1.50. Fine stock. Can be sent by return mail in my improved Pect cage. 13tfdb

L. HEINE, BELMONT, QUEENS CO., N. Y.

F. HOLTKE & CO., OFFER

3-FRAME NUCLEI WITH \$1.00 QUEEN FOR ONLY \$2.00!

This offer is good for July and August only. Each purchaser is entitled to 1 doz. of Peter Henderson's choice selected Hyacinths and Tulips—all to be shipped in light boxes. Send money in Registered letter. Satisfaction guaranteed.

F. HOLTKE & CO.,
Carlstadt, Bergen Co., N. J.

14-15-16d

150 CHOICE CELERY PLANTS

by mail postpaid, for \$1.00; 350 for \$2.00; 1000, by express, \$2.50. Reduction on large lots. Please address **A. T. COOK, CLINTON HOLLOW, DUTCHESS CO., N. Y.**

QUEENS NOW READY.

DARK LEATHER-COLORED

→ **OR LIGHT ITALIANS.**

TESTED, \$2.00; UNTESTED, \$1.00 EACH, OR 6 FOR \$5.00.

Address all orders to

E. PETERMAN, WALDO, WISCONSIN.

13tfdb

Italian Bees in Langstroth Hives.

\$9.00 PER COLONY, 3 FOR \$25.00.

Safe arrival guaranteed. Will give satisfaction. Correspondence solicited.

JOHN M. RAGLAND,

13tfdb

418 Broadway, Denver, Colorado.

TEN COLONIES HYBRID BEES FOR SALE at \$5.00 per colony. **ANN. GRAY, Adams, Gay Co., Neb.** 13 14d

FOR SALE. A 4-horse-power boiler, B. W. Payne & Sons' make. Has been in use about one year. It is as good as new for service. Has crack in base which has been riveted. Will sell boiler complete with pump and heater for \$90.00. 13tfdb **LEE CROSBY, Columbus, Warren Co., Pa.**

TRY THE BELLINZONA ITALIANS, and see for yourself that they are **THE BEST.** Warranted queens in May, \$1.25; June, \$1.10; July and after, \$1.00; six for \$5.00. Bees at reduced rates. Send for descriptive circular. Satisfaction guaranteed. **CHAS. D. D'YVALL,** 9tfdb Spencerville, Mont. Co., Md.

W. Z. HUTCHINSON,

ROGERSVILLE, GENESEE CO., MICH.,

Is now making a specialty of rearing fine Italian queens. All queens reared from the purest and best of mothers, and the cells built in full colonies. No queens sent out that would not be used in the home yard. Single queen, \$1.00; six for \$5.00; twelve or more, 75 cts. each. Tested queens, \$2.00 each. We can still furnish white-poplar sections. Make money orders payable at Flint. 13tfdb

UP WITH ORDERS

I am up with spring orders, and can send queens by return mail. If you want untested Italian queens, reared from imported mothers, send \$1.00 for one; \$1.30 for two; \$5.00 for six; \$9.00 for 12.

Address
12-13-14d

W. S. CAUTHEN,
Pleasant Hill, S. C.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column.

1885 ITALIAN QUEENS 1885

Untested queens in March and April..... \$1.25
Afterward..... 1.00

J. S. TADLOCK,

50tfdb

LULING, CALDWELL CO., TEXAS.

BEES FOR SALE

AFTER THE FIRST OF JULY.

Send for Terms.

12tfdb

H. R. BOARDMAN,
East Townsend, Huron Co., O.

VANDERVORT COMB FOUNDATION MILLS.

Send for samples and reduced price list.

2tfdb

JNO. VANDERVORT, Laceyville, Pa.

JOB LOT OF WIRE CLOTH

AT GREATLY REDUCED PRICES.

SECOND QUALITY WIRE CLOTH AT 1½ CTS. PER SQUARE FT.

SOME OF THE USES TO WHICH THIS WIRE CLOTH CAN BE APPLIED.

This wire cloth is second quality. It will answer nicely for covering the doors and windows, to keep out flies, for covering bee hives and cages for shipping bees; making sieves for sifting seeds, etc.

Number of Square Feet contained in each Roll Respectively.

Inches Wide, No. of Rolls.	Feet.
10	3.3 rolls of 75, 72 s. f.
12	2.2 rolls, 109 s. f. each.
20	3.3 rolls of 166 s. f. each.
22	4.3 rolls of 181, 1 of 169 s. f.
24	6.4 rolls of 200, 1 of 180, and 1 of 190 s. f.
26	7.2 rolls of 217, 38 of 216, 2 of 196, 1 of 156, 2 of 215, 1 of 210, and 1 of 151 s. f.
28	17.4 rolls of 233, and 2 of 231 s. f.
34	7.5 rolls of 281 s. f.
36	3.1 roll of 106 s. f.
38	28 rolls of 316, 3 of 283, 2 of 317, 1 each of 190, 632, 158, 136, and 215 s. f.
40	1.1 roll of 130 s. f.
42	1.1 roll of 245 s. f.
44	2.1 roll of 366, 1 of 318 s. f.
46	1.1 roll of 152 s. f.
48	12.1 rolls of 400, 1 of 209 s. f.

The following is first quality, and is worth 1½ cts. per square foot. It can be used for any purpose for which wire cloth is ordinarily used; and even at 1½ cts. per sq. ft. it is far below the prices usually charged at hardware and furnishing stores, as you will ascertain by making inquiry. We were able to secure this very low price by buying a quantity of over one thousand dollars' worth.

Inches Wide, No. of Rolls.	Feet.
12	42 rolls of 200 sq. ft. each; 1 each of 80, 95, 120, 168, 190, 280, 96 sq. ft.
26	6 rolls of 216 sq. ft. each; 1 each of 65, 86, 195, 195, 200, 201, 201, 204 sq. ft.
28	38 rolls of 233, 6 of 224, 3 of 219, 2 of 222 sq. ft.; 1 each of 49, 70, 116, 210, 215 sq. ft.
30	31 rolls of 230, 2 of 50 sq. ft.; 1 each of 100, 115, 117, 125, 125, 220, 225, 227, 237, 235, 250, 250, 157 sq. ft.
32	2 of 266 sq. ft.; 1 each of 88, 273, and 275 sq. ft.
34	26 rolls of 283 sq. ft. each; 1 each of 62, 113, 198 s. f.
36	21 rolls of 303 sq. ft. each; 2 of 72, 1 each of 130, 150, 240, 279, 285 sq. ft.
38	1 roll each of 200 and 316 sq. ft.
40	1 roll of 233 square feet.
42	1 roll of 350 square feet.
46	1 roll of 152 square feet.

A. I. ROOT, Medina, Ohio.

IF YOU WANT PURE ITALIAN

Bees, Tested Queens, or Nuclei, for one-half Root's price, send me your order at once, or stamp for sample of bees.

THOMAS HOEN, SHEPHERD, N. Y.

BINGHAM SMOKERS AND KNIVES.

BY MAIL, POSTPAID.

Doctor smoker (wide shield)	3½ inch	\$2.00
Conqueror smoker (wide shield)	3 " "	1.75
Large smoker (wide shield)	2½ " "	1.50
Extra smoker (wide shield)	2 " "	1.25
Plain smoker	2 " "	1.00
Little Wonder smoker	1½ " "	.65
Bingham & Hetherington Honey Knife, 2 inch		1.15

To sell again, apply for dozen or half dozen rates. Address
BINGHAM & HETHERINGTON, ABRONIA, MICH.
10, 11b

PURE ITALIAN QUEENS.

Tested, \$2.00 each. Untested, 90c each. Four or more at one order, 75c each. Will furnish 1 lb. of bees with each queen, if wanted, for \$1.35 additional; 2 L. frame nuclei, with untested queens, \$2.50. All queens bred from a fine imported queen. No black bees near.

D. G. EDMISTON

14d Adrian, Lenawee Co., Mich.

THE CANADIAN BEE JOURNAL.

WEEKLY, \$1.00 PER YEAR.

D. A. Jones & Co., Publishers, Beeton, Ont., Can.

The only bee journal printed in Canada, and containing much valuable and interesting matter each week from the pens of leading Canadian and United States bee-keepers. Sample copy sent free on receipt of address. Printed on nice toned paper, and in a nice shape for binding, making in one year a volume of 832 pages.

9f1b

EXCHANGE DEPARTMENT.

Notices will be inserted under this head at one-half our usual rates. All ads intended for this department must not exceed 5 lines, and you must say what you want your ad in this department, or we will not be responsible for any error.

WANTED.—To exchange one good nearly new half-inch half-painted 50-inch bicycle for honey (comb honey preferred), or chickens and young hens of common or fancy breeds. Please correspond.

RUEL E. CLARK,

14 Box 444, Bellows Falls, Windham Co., Vt.

W. C. EATON, Photographer, Newark, N. J., will make life-size crayon photos (can be made from *daguerrials* pictures), in exchange for bees. Satisfaction guaranteed.

14d

WANTED.—To exchange chaff hives for good extracted clover honey. I will allow 9 cents, delivered here. Chaff hives, \$2.00 each. Correspondence solicited.

14d W. K. LEWIS, Dry Ridge, Grant Co., Ky.

WANTED.—To exchange celery plants for a printing press, type, etc., bound books, or offers. See advertisement in another column for prices.

A. T. COOK, Clinton Hollow, N. Y.

WANTED.—To exchange Italian bees in Simplicity hives for Wyandotte fowls and Pekin ducks. None but fine fowls wanted.

14d J. H. REED, Orleans, Orange Co., Ind.

WANTED.—To exchange, a No. 1 Pelham Foundation mill; also the castings, mandrel, and all pertaining to a hand-power saw. GEO. M. BISHOP, No. 284 Mass. Ave., Indianapolis, Ind.

WANTED.—To exchange bees, queens, grapevines, strawberry, raspberry, and blackberry plants, etc. (200 sorts), for advertising space in books or papers, or for anything I can sell for cash.

14d

F. L. WRIGHT, Plainfield, Mich.

WANTED.—To exchange Simplicity hives, complete or in flat section boxes, foundation, smokers, and supplies, for new extracted clover, or light-color pure honey. Correspondence solicited.

14d Model B. Hive Co., 521 & Jefferson St., Philadelphia, Pa.

BEES BY THE POUND

AT 75 CENTS, AND SAFE ARRIVAL GUARANTEED.

QUEENS.—Italian, Holy-Land, or Albino, \$1.00. Tested Queens, \$1.50.

14-15d PELHAM & WILLIAMS, Maysville, Ky.

DADANT'S FOUNDATION FACTORY, Wholesale and retail. See advertisement in another column.

30f1d

100 SWARMS OF BEES FOR SALE

Containing from 50 to 60 lbs. of honey each, with 10 frames of comb, L. size. Sent in shipping-boxes, at \$6.00 per colony, with untested queens. Discount on 10 to 20 swarms. In good L. hives, \$7.00. Also 500 frames of brood, covered with bees, at 75 cents each. Parties desiring to purchase may deposit money with the editor of GLEANINGS till they are satisfied. Address:

A. W. CHENEY, Kanawha Falls, W. Va.

WE WILL SELL

6 OR 10 SWARMS IN 1-STORY SIMPLICITY HIVES AT \$7.00 EACH OR THE 10 FRAMES PUT INTO TUBBAGERS' HIVES, AT \$5.00 EACH.

A. C. KENDEL, 14f1b CLEVELAND, O.

NUCLEI AND QUEENS FOR SALE.

Three L. frame nuclei, full of bees, brood, and honey, with a choice tested Italian queen, from my imported stock, at the low price of only \$2.50, and satisfaction guaranteed. Address

14d J. A. BUCHANAN, Hollday's Cove, W. Va.

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IF YOU WANT

A GOOD ONE-PIECE SECTION *CHEAP*

Send to us. Sample and Price List Free.

SMITH & SMITH, KENTON, HARDIN CO., OHIO
2tfdb

BEES and QUEENS

At Greatly Reduced Prices.

After June 15 I will sell 2-frame nuclei, with 2 lbs. of bees in each, no queen, for \$2.25 each. Tested queens, \$1.50 each; warranted queens, \$1.00 each; untested queens, 75 c. each, either Syrian or Italian.

I. R. GOOD, Sparta, Tenn.

MUTH'S

HONEY-EXTRACTOR,

SQUARE GLASS HONEY-JARS,
TIN BUCKETS, BEE-HIVES,
HONEY-SECTIONS, &c., &c.

Apply to CHAS. F. MUTH, CINCINNATI, O.

P. S.—Send 10-cent stamp for "Practical Hints to
Bee-Keepers." 1tfdb

1885 ITALIAN QUEENS 1885

Untested Queens in March and April..... \$1 25
Afterward..... 1 00

J. S. TABLOCK,

5tfdb LULING, CALDWELL CO., TEXAS.

Choice Untested Italian Queens

BY RETURN MAIL.

YELLOW! - LARGE!! - PROLIFIC!!!

Single Queen, \$1.00; six or more, 90 cents each.
C. M. GOODSPEED, Thorn Hill, N. Y., Aug. 1, 1885.

ITALIAN QUEENS

For sale, cheap as the cheapest, from selected Italian queens. Tested Queens, \$1.00; untested queens, 60 cents; hybrid Queens, 30 cents. Safe arrival guaranteed every time.
C. C. KIRKMAN,
15tfdb COXVILLE, PITTS CO., N. C.

38 Four-Frame Nuclei For Sale,

With dollar queen, bees, and brood, in new Langstroth hive, at \$3.00 each.
J. H. REED,
15td MILFORD, WIS.

LET ME HELP YOU.

I will sell, to all wishing to buy during July, August, and September, pure Italians. One hive for \$6.00; five or more for \$5.50 each.

Hybrids, one for \$5.00; five or more for \$4.50 each. Blacks, one for \$4.50; five and more, \$4.00 each. All 10-frame, 2-story, new Langstroth hives. Safe arrival guaranteed.
G. W. ALBRECHT,
13-14-15d Dundas, Calumet Co., Wis.

DADANT'S FOUNDATION FACTORY, WHOLE-SALE AND RETAIL. See advertisement in another column. 30tfdb

FALL QUEENS.

I have a choice lot of Italian and Cyprian queens, which I will now sell at \$5.00 per half-dozen. Satisfaction guaranteed. Address

REV. J. E. KEARNS, MORNING SUN, IOWA.

HUTCHINSON'S

ADVERTISEMENT.

We are now making a specialty of rearing fine Italian queens. All queens are bred from the purest and best of mothers, and the cells built in full colonies. We have one of A. I. Root's very best, selected, tested, imported queens, also quite a number of very superior home-bred queens from the apiary of "Cyrus Linswik." Besides this we have our own original stock which was built up from Dadant imported stock and from queens obtained from several of our best breeders. We are not trying to see how cheaply we can rear queens, but how good ones we can furnish. No queens will be sent out that would not be used in the home apiary. Single queen, \$1.00; six for \$5.00; twelve or more, 75 cts. each. Tested queens, \$2.00 each. Full colonies, \$5.00 each. Make money orders payable at Flint. Address

W. Z. HUTCHINSON,

15tfdb Rogersville, Genesee Co., Mich.

PRICES REDUCED!

Until further notice I will furnish untested Italian queens at 80c. each; 6 for \$4.50. Warranted queens, 90c. each; 6 for \$5.00. All queens bred from my choice improved stock, and the cells built in full strong colonies. Safe arrival and satisfaction always guaranteed.
J. P. MOORE,
MORGAN, PENDLETON CO., KY.

Red-Clover Queens by Return Mail.

I am now up with my orders, and can send queens by return mail. My queens are almost without an exception purely mated, and my bees worked just thick on red clover from the time it bloomed until the present.
J. T. WILSON,
15tfdb NICHOLASVILLE, KY.

75 COLONIES ITALIAN BEES

FOR SALE CHEAP.

To reduce stock I will sell, until Nov. 1st, as follows:

1 to 5 at	\$6 00
5 to 10 "	5 50
10 to 20 "	5 00
20 to 50 "	4 50
50 to 75 "	4 00

Pure Italians in new Simplicity hives, well painted, on wired L frames, with 30 to 40 lbs. white honey in each. I will deliver at L. S. & M. S. Ry. Depot, and guarantee safe arrival. Will ship on 9 frames.

S. D. McKim, Madison, Lake Co., O.

VANDERVORT

COMB FOUNDATION MILLS.

Send for samples and reduced price list.
2tfdb JNO. VANDERVORT, Laceyville, Pa.



Vol. XIII.

AUG. 1, 1885.

No. 15.

TERMS: \$1.00 PER ANNUM, IN ADVANCE.
2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00;
10 or more, 75 cts. each. Single Number,
10 cts. Additions to clubs may be made
at club rates. Above are all to be sent
to ONE POSTOFFICE.

Established in 1873.

PUBLISHED SEMI-MONTHLY BY

A. I. ROOT, MEDINA, OHIO.

Clubs for different postoffices, NOT LESS
than 10 cts. each. Sent postpaid, in the
U. S. and Canada. To all other coun-
tries of the Universal Postal Union, 18c
per year extra. To all countries NOT of
the U. P. U., 42c per year extra.

NOTES FROM THE BANNER APIARY.

NO. 68.

THE BOOM ON BASSWOOD, ETC.

NO two seasons seem to be exactly alike. Last year the honey harvest began early, was of short duration, but good while it lasted. No honey from basswood. This year the season opened late, the weather was cool, and the flow of honey light but steady—just right to keep breeding going in fine style, but scarcely enough to send the bees into the boxes. Last year we had off more than 1000 lbs. of honey July 1st; this year the bees had only commenced in the boxes at that date, and they had made only a nice commencement, some of them not that, when they began to swarm, and nearly every colony swarmed; and we think it was to our advantage that they did swarm; for by the time that basswood blossomed we had two colonies in fine working order where we would have had only one had they not swarmed. The bee-keeper needs to be wide awake, to *think*, to watch the season, the bees, and every thing, and plan his work accordingly. For three years we have kept our dish—our big tin cans and little tin cans right side up, ready for the shower of—basswood honey. At last it has come, is here now (July 22); the very air is loaded with the aroma from the basswood blossoms; the branches really seem to hang down as though they were loaded; the bees come in so loaded that they “drop,” and they work until it is dark and our cans are full. It is really astonishing to see how much honey the 100 queen-rearing nuclei bring in. It does *seem* as though bees that have but little brood, and plenty of combs to fill, store twice as much honey as bees with a hive full of brood to care for.

WOODEN QUEEN-EXCLUDING HONEY-BOARDS.

We are giving these a thorough trial this season, using about 50 of them. So far we have just one fault to find with them; and that is, the bees are inclined to fill up the openings with wax and propolis. It is very evident, that, after being in use a year or two, “something has got to be done” to clean out the openings. We tried cleaning one to-day with a tea-kettle of boiling water. We did it, but it required a tea-kettle full of water. Who will suggest a better way? How would it answer to fill a wash-boiler with them, pour in water, and boil them, keeping them below the surface with a weight, if necessary, until the water is cool. Our objection to the perforated zinc is its cost and lack of rigidity; but it has this in its favor—the bees are less inclined to fill the openings.

GUARANTEEING SAFE ARRIVAL.

Your editorial upon the above subject is good. In addition we would say, that when queens *do* arrive dead or weak, or the purchaser thinks he ought to have another queen, or the queen sent doesn't suit, let him state the matter calmly, coolly, fairly, and gentlemanly. The majority of customers do this; but occasionally one is found who seems to think that all the queen-breeder is after is the dollar—that he has no care whether he pleases his customers or not, and he writes one of those sarcastic, cutting, stinging letters that, to a breeder who is not only willing but anxious to please his customers, come like a blow in the face. We have received very few such letters—just enough to know how they hurt, but not so many as formerly. One reason is, that we seldom have a queen arrive dead since using the Good candy. We used to lose at least ten per cent. This year we have lost none since the season opened. We feel as though Bro. Good had never been sufficiently recompensed, either in money or

thanks, for giving this "Good" candy to the public in the way he has done.

It is no use, friend Root; we can neither write brilliantly nor instructively with this roaring in our ears. What roaring? Why, the roaring of the bees working on basswood. We must lay down the pen and go out and work among them.

8—W. Z. HUTCHINSON, 70—100.

Rogersville, Mich.

Well, friend H., I suppose we are to understand the wooden queen-excluding honey-boards work all right, with the exception of this objection you mention, of wax and propolis. I think a jet of steam would clean them quickly and nicely.—I want to second your request that customers may state their complaints calmly, coolly, fairly, and gentlemanly. Not more than an hour ago I received a letter from a man who could not introduce the queen he had received; and simply because his bees would not accept her, he jumped at the conclusion that we had sent him a queen imperfect in some way; for he said that, according to his experience, when bees rejected a queen it was because the queens were defective in some way. He wound up his letter by threatening to publish us if we did not send another one in her stead. Now, I do not want to be uncharitable on my part. May be this friend has been humbugged, and has decided the only way to make a man honest is to talk right up to him, and threaten to publish him in the papers. If it works with everybody as it works with me, it is a very poor plan.—We are glad to know that the basswood boom has gone away up to Rogersville, Mich.

MRS. CHADDOCK'S LETTER.

She tells us about Bees, Strawberries, and some other things.

WHY THE BEES THAT DIXON & DILLON SENT GOT AHEAD OF THE BEES WE SENT.

DEAR MR. ROOT:—There might be an advantage in the larger cage that Dixon & Dillon use. The cages that they sent their half-pounds in were twice as large as your half-pound cages, and fully as large as Mr. Gedye sent me the one-pound packages of German bees in. Then I suppose the Dixon & Dillon bees were caged only half a day. I think they could come to Vermont from Parrish in two hours. They were the sprightliest bees that I ever saw. It was nearly dark when we put the first lot in the hives—so dark that we had hard work to see the queen; but the bees went right to work as if they had been defrauded out of all the time spent in transit, and were going to make up for it. They were clearing out the hives. It was two of their first ones that built up so fast. Afterward he sent for three more half-pounds; and when they came, one queen was dead, and brother Phillips united the queenless ones with one of the others, making a pound of bees in that hive. Then he sent for another pound. The last lot that he sent for came a week later than the first; and the last pound, ten days later than the first.

Well, I went down this morning, and went through them. The two ½-lb. packages that I was jealous of have grown into full colonies; they have the sections on, and are "nosing" around in them.

The hive that had the one pound in is full also, and the bees have built new comb in the sections in two places, building upward some pieces as large as my hand. The last pound that came is next best, and the others are all much better than mine. None of them have put any honey in the sections, because they were not put on soon enough for the white-clover honey, and the basswood did not amount to any thing at all this year; and what honey the bees get now is from catnip, smartweed, mustard, and such small game, barely enough for their own use. They have not put an ounce of honey in my boxes in the last week. So you see some of brother Phillips' half-pounds almost equaled his whole pounds, but they had a week the start; and a week in the midst of the white-clover harvest is equal to three weeks at some other times. The bees go wild with greed, and excel themselves.

I looked at the queens in my "poor bees" to-day, and I never saw finer queens, so large and yellow. I had thought that I would let them alone, and see what they would come to; but when I looked at them to-day I felt sorry for them, and gave them lots of brood from other hives, and they will be all right after this.

When Mr. Gates was having so much trouble and worry, if he had only "said so," all would have been well. But perhaps he had not time to "say so." I think I can see it all. All the work to do, man crippled, baby sick, father sitting up till midnight, mother sitting up till morning, both of them getting up tired and sleepy, and doing every thing at once, and doing nothing as they would like to—nothing but waiting on the sick child—that is done just right. Then the other child is sick, and they go from one bed to the other, giving water and medicine, and are almost distracted, when here comes a "mad letter" from a "sassy woman" up in Illinois, and the father and mother look at each other and say, "We could not help it, could we?" I am very sorry for hurting their feelings, and I hope the children are well now.

Yes, I raise strawberries. I told in GLEANINGS how I set them out. Well, I did nothing more to them. The men cut off the sweet corn and fed it to the cows, and the plants grew. After the ground was frozen solid we carried straw, and covered the plants about two inches deep. Last year we did not have any berries to speak of; but this year we sold 36 gallons, and used and gave away 43. We had Crescent and Charles Downing, with a sprinkling of Green's Prolific. We sold them in quart boxes, at ten cents a box, or 32 cents a gallon, where they took six gallons at one house. We did not expect, when we set the plants, to have more than enough for ourselves. We set only 400; but this was a good year for strawberries, and ours were very fine. I have a plat of sod ground that was plowed the middle of June, and we hoed and pulled the weeds in it last week, large enough to set 500 plants. I want to have all that we can possibly eat. We ate three gallons a day; and if there are a few more, we can always sell them. I know families where there are half a dozen children living on farms, that do not raise a strawberry. I think it is cruel not to give children strawberries to eat. There are fifteen acres of them planted in and around the town of Vermont, Ill. They ship them to Rock Island, Peoria, and various other points. This year there was a glut in the market; and Dr. Taylor, who has 3½ acres in strawberries, gave out word that anybody

who wanted to might come to his fruit-farm and pick berries for themselves, if they would pay him fifty cents a case (a case holds six gallons) and the people flocked in for miles around—came in wagon and buggy loads from little towns eight and ten miles away. People who had never had strawberries on their tables took eighteen gallons. The "feast of strawberries" lasted three days, and the doctor told me that letting the people have them cheap saved the rest of the crop, as the vines would have been ruined if the berries had been left on, and he could not think of hiring them picked, and then throwing them away. So that was a kind of charity that blessed the giver as well as the receiver, literally.

A few words to sister Nellie Linswik, and I close.

My dear sister, bee-keeping is a business; religion is a sentiment; and whenever business and sentiment *can* go hand in hand, let them do so; but whenever business and sentiment come in conflict, then sentiment is bound to go to the wall. Now, I love to go to meeting; I like the music of the organ, and the good singing. When I shut my eyes I am wafted away off yonder, away from all the cares and turmoils of life; and then the sermon strengthens me, and the prayers lift me up; and when the meeting is over I like to shake hands with everybody, and talk a few minutes with the good old minister whom I have known for twenty years. Yes, I love it; but I never leave my bees to go to church, nor anywhere else, in swarming time, unless I have a substitute to care for them. Sometimes when I am "just aching" to go to meeting I ask some of the rest of the family to "play martyr" in my place; but if they look sour, or pout the lips, or make the least sign that I can read, I do not accept their services, but stay at home myself.

My bees *always* swarm on Sunday and on the Fourth of July. They have swarmed every Fourth of July since I have kept them. Last year was a very poor season for bees. I had only three swarms, and one of them was on the Fourth of July. Sometimes I ask Mr. Chaddock to watch the bees for me; but I tell him which hive is going to swarm, and fix the new hive all ready, put a goblet on a plate to hold the queen, and every thing. Mr. C. is not strong; and during the working season he gets completely worn out through the week, and he won't go to meeting nor anywhere on Sunday, but just rests; and if I would always leave him the bees to care for, sometimes he would not get much rest. And as I "think considerable of him," I don't want him to work too hard. The bees are mine, and I do not want him to feel bound to do any thing to them, unless he wants to. There are four of us now—Mallieonie, Irving, Mr. C., and myself, who are not afraid of bees; and as bees swarm only about three weeks every year (as a general thing), it is not so great a punishment after all for some of us to watch them. You know what the Bible says about taking things out of the ditch.

MAHALA B. CHADDOCK.

Vermont, Ill., July 25, 1885.

My good friend Mrs. C., I am afraid you are not quite orthodox, in calling religion a sentiment. Would you call your love for your child a sentiment, and put business before it? The Bible says, "Seek ye *first* the kingdom of God and his righteousness." No doubt you are right in deciding that sometimes you can serve God more fully by re-

maining at home than by going to church; but somehow it does not seem quite right where you speak of making business come before love to God; but I presume you did not mean it that way.

PERFORATED ZINC A SUCCESS.

IT RENDERS THE CLIPPING OF QUEENS' WINGS UNNECESSARY.

ON page 455 of July GLEANINGS, in your comments on friend Doolittle's article on "Clipping Queens' Wings," you state that you don't get many definite reports as to how the perforated zinc works, as to obviating the necessity of clipping the queens' wings, etc. I will herewith give you my experience the present season with the Jones guard.

I regard the perforated zinc as a very great advance forward in bee culture. I make my guards somewhat different from the Jones. I place one over each entrance, that is at all likely to swarm soon. When the swarm issues I am on hand to look after it. I wait until the swarm is all, or nearly all, out, when the queen will always be seen, promenading and worrying to get through the guard. I move the guard away carefully, all the time keeping my eyes on the queen, and pick her up by the wings. It requires a little dexterity to catch her sure every time. But out of some 20 swarms or over I have missed catching only two, and that was rather on account of a little carelessness. The queen nearly always makes from two to three efforts to take wing, when they can usually be readily caught.

Another point for which I value the zinc guard highly is, that when the queen is released into the new hive, by placing a guard over the entrance for three or four days, until she is established in her new home, you never need be uneasy about the swarm deserting the new hive; for if they should take a notion to leave, when they would find their queen was not along they would return. I find it necessary, while the guards are over the entrance of strong colonies, to remove them for a few moments about 3 o'clock in the afternoon, in order that the drones may get out.

Bees store honey from the

MAAMOTH CLOVER, AT MY HOUSE; SOME INTERESTING FACTS IN REGARD TO IT.

To-day I started toward the creek timber that lies three-fourths of a mile east of my apiary, where there is basswood in abundance; and when I got over into my 15 acres of mammoth clover that is out in full bloom, I was somewhat astonished to see the clover literally swarming with Italians.

"Oh! well, they smell it and want to get at it, and can't—eh?"

"No, sir."

That basswood forest lying just across that clover-field from the apiary, three-fourths of a mile, in full view, and just in its prime, and very rich, is the strongest argument that has yet come under my observation, that bees secure large stores from the red clover. I became so interested in the clover that I plucked off a handful of bloom and brought it along home, and made a careful study of it under a good compound microscope. I found quite a large proportion of the heads containing tubes quite *short*, and easy of access to the bees. Out in the fields I plucked a number of heads; and,

taking hold of the stem, and striking it a hard rap in my hand I could see the nectar splash right out into my hand.

D. E. BRUBAKER.

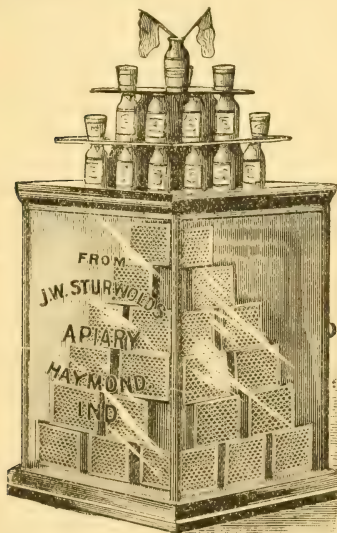
Maxwell, Story Co., Ia., July 14, 1885.

Friend B., if I understand you correctly, in your experience the perforated zinc, as furnished by D. A. Jones, restrains the *queen* as well as the drones. Am I correct?

AIDS FOR RETAILING HONEY.

SOMETHING FURTHER IN REGARD TO THE STURWOLD HONEY SHOW-CASES.

WE are happy to inform our friends, that, after considerable correspondence with show-case manufacturers, we have finally succeeded in getting a glass show-case made, expressly for showing packages of honey for retailing, like the one figured in GLEANINGS, page 11, 1884, and illustrated in the A B C book, page 63. We are pleased and surprised to find that we have found a firm who will furnish them so that we are enabled to supply our customers and bee-friends at an even \$5.00. Furthermore, the manufacturers agree to deliver them free of breakage. This latter item is one of considerable moment. That you may know better what you are going to get, we give cut below.



STURWOLD'S SHOW-CASE FOR HONEY.

If you want your name in bronze letters, similar to the way it is shown in the cut, the price will be 40 cents additional. The case is 24 feet high, and 16 inches square, outside measure, top and bottom. The sheets of glass of which it is made are 12 x 26. The case as made above is a little tall for its other dimensions, and we have got the man-

ufacturers to give us figures on one using sheets of glass 16 inches wide—the length as above, and the price will be \$1.00 more. The above case is to be set up in any grocery, drug-store, or other place of business where you wish your honey exhibited or sold. The show-cases will be shipped from Quincy, Ill.

Of late, we have been doing a nice little trade in comb honey in sections, by taking it around our town in a wagon. The sections are Simplicity size, 7 to the foot, Heddon's thickness, used without separators. We have sold hundreds of them, and they are sufficiently regular so they go into our pasteboard boxes without any trouble. The pasteboard boxes are like this. For prices, see cover to our issue of June 15. Of course, these sections do not hold a pound of honey.



Before the wagon starts out in the morning, one of our girls weighs the section, slips it into the pasteboard box case, and marks on the cover the price. We get 18 cts. per pound for the honey, case included, and they weigh so as to generally bring the price at about 16 or 17 cents. We have a new light spring wagon, lettered on one side, "Home of the Honey-Bees." Three hands are needed to work to advantage. Two of them may be active boys. One drives while the other two take each one a side of the street, calling at every house, and slipping out a section of honey to show how nice it is. They sell at almost every house. Even though honey is retailed at the groceries at 15 cents per lb., we find little trouble in getting 18 for these small neat packages. We propose to sell extracted honey in the same way; but just now it does not seem to take as well as the nice comb honey. One reason for trying this experiment was to see how much honey could be sold in this way; and it is my opinion that tons and tons can be sold by going to villages, towns, and cities.

A FOUL SCANDAL IN REGARD TO OUR INDUSTRY.

ACCUSING BEE-KEEPERS OF FEEDING GLUCOSE, AND LABELING THE PRODUCT "WHITE COMB HONEY."

THE following statement has been sent us by our subscribers, north, south, east, and west, and seems to have been copied by hundreds of papers, and probably will continue to be copied. We give place to it in order that we may better show the utter untruthfulness of the whole fabrication.

MACHINE HONEY; HOW A SHARP MICHIGAN APIARIST HAS EDUCATED HIS BEES.

A Wayne County farmer, says the Detroit Free Press, has succeeded in earning a place in history along with the Connecticut man who invented wooden nutmegs. He lives between Detroit and Dearborn, on Michigan Avenue, in a vine-covered cottage a little way back from the road. On the front fence appears the sign, "White-Clover Honey." Back of the house is an apiary with all the modern inventions for the care of bees, and nearly fifty hives sound with the cheerful humming of the busy honey-makers.

A representative of the *Free Press*, quite by accident, called at the house yesterday and found no one at home; and while sitting by an old well-curb refreshing himself with cool water from an old oaken bucket, his attention was called to the action of the bees. The cottage is surrounded with luxuriant roses in full bloom, but these bees did not, as bees used to do,

Gather honey all the day
From every opening flower.

Instead they were swarming around a tray which stood near by, and were flying back and forth to the hives. In this tray was half an inch of a sticky mass that looked like syrup. Little sticks were strewn over this substance, and on these the bees were alighting; and after taking some of the syrup they flew back to the hives.

"What do you want o' them bees?"

The intruder started up, and found a barefooted lad standing before him.

"What is this the bees are taking?" asked the visitor.

"What do you want to know for? Dad said we wasn't to tell any one any thing about it."

"I'll give you a quarter if you will," said the reporter, now thoroughly interested.

"Well, I donno what it is. Dad gets it from town in a bar'l. Here's what he gets it in," pointing to a large cask.

On the end of the barrel was the stencil mark: "200 lbs. grape sugar from Michigan Grape-Sugar Manufactory."

"Is that glucose that the bees are getting?"

"It's something that dad gets out of that bar'l, that's all I know about it."

The inquiring visitor tasted it. There was an unmistakable gundrop flavor to it.

"We had hard work to get the bees used to it. Dad put in a lot of syrup at first, but the bees take it straight now."

"How long does it take to fill a hive?"

"Not near so long as it does when they have to get the honey from flowers. We've taken out a lot this year already."

The boy brought out of the house a box of glucose honey which looked as clear and inviting as though the sweets had been distilled from the purest flowers.

"Do you eat it?" the boy was asked.

"Sometimes. It ain't so good as the other, but it's just as good to sell. Say, don't you ever give me away to dad, or he'd skin me."

Now, the principal point is to find out the foundation of this whole story. Doubtless some bee-keeper living near the point indicated may be able to find out how much the reporter found to build up his story on; and as we stated in regard to the honey-poisoning case, I will willingly pay any bee-keeper, or any one interested, for giving us the full facts in the case. No doubt the reporter found a man with nearly fifty hives, as he mentions, and called at a time when he was feeding his bees, perhaps for stimulating brood-rearing in the spring. No doubt he also saw the sign on the front fence, "White - Clover Honey." But that this white-clover honey was made out of glucose, we think we can prove beyond question was a mistake or a fabrication. It is quite likely our bee-keeping friend did use grape sugar to feed his bees with. But if he tried to get the bees to store the product in the combs, it certainly took longer, and cost more, than to get the genuine clover honey in the usual way. If the boy made that statement, that it did not take nearly as long as when they have to get the honey from the flowers, he was mistaken. The description of the feeder shows that it was nothing but an arrangement for feeding, as before mentioned; for such a feeder in the open air, among nearly fifty hives, would by no means enable any one of the fifty hives to store honey in the boxes. The grape sugar would also candy

in the combs as fast as the bees stored it, as every one knows who has used it for feeding—that is, if it were not used for brood-rearing; and grape sugar stored in the comb would not be salable under any circumstances. He says the barrel was labeled "Grape Sugar;" yet the *Detroit Free Press* says the man was "feeding glucose," etc. Now, grape sugar is not glucose; and feeding grape sugar can not be the means of getting glucose into the combs. I wonder how many times I shall have to go over this matter. Glucose fed to bees, and stored in combs, would have the appearance of honey, but the honey would taste more like a solution of gum than like genuine honey. I have never made any experiments in feeding glucose to bees, but I have fed grape sugar during warm weather, just enough to keep up brood-rearing, by the hundreds of pounds, and I am perfectly at home in what I am saying, when I state that it can by no means produce any thing even resembling honey—much less white-clover honey. Another thing, the best arrangement known for feeding will not enable the bees to store a fourth part as much grape-sugar syrup, or even syrup of granulated cane sugar, as is needed to make it profitable. This subject has all been thoroughly gone over in our bee-journals in years past. The whole matter from beginning to end is an utter impossibility—that is, so far as the story of making marketable comb honey in this way is concerned. If the *Detroit Free Press* think they can substantiate their statements, we challenge them to furnish the proof; and when we prove conclusively that their reporter's statement is a vile slander on bee-keepers as a class, we hope they will have the fairness to correct what they have said.

JOTTINGS FROM STREETSVILLE APIARY, ONTARIO.

A REPORT OF THE HONEY SEASON IN CANADA.

WELL, the honey season of 1885 will soon be as a tale that is told; and I very much fear that the narrator, if a raiser of that precious nectar, will not wear an "overly satisfied countenance." Clover, although abundant, has had much of the nectar washed away by ever-recurring rains just about the time bees began to gather from it. I doubt if there has been any more than eight days of full gathering yet. Basswood, although loaded with blossoms, does not now secrete honey as freely as, in days gone by, when the forest stood in large unbroken blocks; and indications seem to point that it is not now an altogether certain source of honey.

Swarming, that great bugbear of a large apiary, has been excessive; and I fear, where stocks are left unexamined by the go-as-you-please bee-keeper, many will be left in an unfit condition to face winter's storms. This class would do well to take timely warning and examine hives without delay, to see that they have either laying queens or larvae from which the bees may raise them.

I have used several different makes of foundation, but find the bees much prefer the "Given" for brooding purposes.

After a trial of queens as nature endowed them with wings, during the swarming outburst of this season, I am about satisfied there is a better way for large apiaries, and shall henceforth resort to clipping. By curtailing her majesty's ancient privilege of flight we are quite as likely to save herself, and we certainly save time, trouble, and the bees belonging to the swarm. Of the many occasions that try that most patient of men, the apiarist, one I have found to be when three or more swarms issue simultaneously, and alight on the leafy pendant limb of an elm, forty feet from *terra firma*, the thermometer meanwhile registering 90° in the shade. Then is the time to wish for a dozen of the invalid old gentlemen and delicate ladies who are so often advised (in the cool retreat of the editor's sanctum, perhaps) to try bee-keeping as an easy pursuit, requiring no particular work, no capital, little brains, not much of any thing, you know, as bees ask "no wages and board themselves."

As to hives, we are, I am persuaded, on the eve of some very great improvements—notably the adoption of the reversible frame, and cases of sections; and subsidiary to this, a practice I am now trying with satisfaction so far (not original). I refer to contracting the brood-nest of the hive by withdrawing all frames but five or six, substituting cases or division-boards twenty days after swarming, and also living the swarm on the same number of frames of fdn.; then put on section cases, and the bees will proceed to work.

In conclusion I would advise those having honey to sell in Canada, not to let it go at the bottom prices of last year. All we are now likely to raise will be inquired after before honey comes again.

J. C. THOM.

Streetsville, Ont., Can., July 23, 1885.

QUEEN-EXCLUDERS AND HONEY-EXTRACTORS.

USING THE QUEEN-EXCLUDING HONEY-BOARD UNDER A BOTTOMLESS HIVE.

AGAIN we have put to test quite a number of queen-excluding honey-boards. I now feel quite confident that they are a practical success. I know that some of my brother beekeepers will say that they knew that before. Well, I did not; and it took me two years to find it out. Many claim that entrance-guards and queen and drone traps are also practical; but I think they are not. Again this year we have tested them also, and we are of the opinion that they are not to come into general use. Where we deem it necessary to prevent the flight of drones temporarily, or till they can be let out and left out, we have succeeded by placing a queen-excluding honey-board under a bottomless hive, the entrance being under the honey-board (all our honey-boards contain a bee-space in one side). We like metal better than wood for these excluders, only because we find that such narrow passages through a sheet as thick as wood will be so clogged up with wax that most of the passage-way will soon be filled. With the thin metal, the passages remain open. But here comes the difficulty—cost. Can't we cut a corner somewhere, and get these metal queen-excluders cheaper? How much cheaper is galvanized iron, and will that do? I have the Jones size of passages, and also yours, Mr. Editor; and through either of them the

bees apparently store as readily as though it were not there. I am, however, in favor of having the passages as large as we can, and yet exclude queens. Now, what are the reports regarding this point? As far as the production of comb honey is concerned, in my practice with the sink honey-board I can see almost no advantage to be gained by the use of the queen excluders; but for extracted honey I want them. I have also discovered that two queens can be kept in the hive, one on each side of the excluder. In fact, wherever I have used the excluder, as soon as I put eggs and young larvae above it (where the queen could not go), queen-cells were started in quantity. In several instances last season, young queens were hatched. In two such, where we had put the queen above (to test the excluding powers of the board) she remained above, and a young queen was reared, hatched, and fertilized, below. This point is going to be of value to us in future. I think it is one of the valuable features of the honey-board. Is it Mr. D. A. Jones whom we owe for this invention? Let us not be guilty of omitting to give credit to whom it justly belongs.

Who will give the specialist a

HONEY-EXTRACTOR?

I know we have some very good cheap extractors on the market—some that perhaps pay a greater dividend on their cost, to the small apiarist, than would a better and higher-priced machine; but the specialist can not afford to squeeze along from year to year with such machines. Now just think of a shirt-knitting machine. If it were made as carelessly as our extractors, would it take *one* stitch? Of course, not. Once make a machine accurate and good enough, and it can be made to reverse its combs without touching them; never wriggle around when running with one comb; and by all means it should have a slip-gearing so that, when once started, it will run independently of the crank, and whirl out the honey from one side of each comb while the operator is uncapping the next. It must have a foot-brake that will stop it almost instantly, and be made durable, and be attached firmly to the building containing it. Who can give us such a machine?

For your next issue I will give you my method of "modern transferring," which we like so well, and which you call for on page 484. JAMES HEDDON.

Dowagiac, Mich.

Friend H., your plan of using the queen-excluder is, so far as I know, new. I never heard or thought of it before, and I think the suggestion does you credit. Galvanized iron is no cheaper, all things considered, than the zinc, and it is so much harder to perforate that much more expensive machinery would be required. Thanks, also, for your report in regard to the two kinds of perforated zinc.—The matter of raising queens in the same hive where a laying queen presides is quite an item. But, how would a young queen get out to be fertilized, unless she passed through the domain of the old one? From what you say, I presume she would be treated as a daughter, or an assistant, if you choose, in the egg-laying business.—Such an extractor as you mention, it seems to me, would be almost too complicated for practical work. We have made some experiments in regard to a "brake," but we gave it up.

A GOOD MANY THINGS ABOUT BEE CULTURE.

Friend Salisbury's Ideas in Regard to Them.

ESPECIALLY HIS OBJECTIONS TO CERTAIN THINGS.

I SEE frequent memoranda in published correspondence of GLEANINGS about how a bee-paper *ought* to be conducted. With reference to all such, I feel as the preacher did when taken to task by one of his congregation about the uninterestingness of his sermons. "Just step into the pulpit to-morrow, and preach yourself." Let one of these advisers start a bee-paper, and see how long he would last. I fancy he would tell *all he knows* about bees in just about *two papers*. I have kept bees over forty years; have read GLEANINGS ever since I first heard of its existence, and my last subscription, now well nigh up, was for five years. I take two daily newspapers, over half a dozen weeklies, and several monthly papers or magazines, and I look for no paper with more interest than GLEANINGS—not that I read all or even half that is therein printed, for I care nothing for the A B C letters or suggestions. I find enough, however, to interest me for an hour or two, and would not wish to be without it. What does not interest me I do not read, just the same as with other papers; neither would I dictate to the editor, who evidently knows his own business, as his increasing subscription-list abundantly proves.

WINTERING WITHOUT LOSS.

It amuses me to see individuals boast of wintering their bees without loss. I know they are either novices or have but few colonies, and by the merest accident called "luck" have got through the winter with all their colonies. One person with one thousand sheep can as well calculate on wintering every sheep as another person with one hundred colonies of bees can calculate on wintering and springing them all without loss. The only question is the per cent. During 40 years, the last 25 of which have been with movable frames, I have seldom got through with both winter and spring without some loss. Sometimes it might be, however, by the uniting of a queenless colony with a small one with a queen. I have sometimes had my strongest colony perish, with plenty, of honey and ample protection. This last winter and spring reduced the number of my colonies by one-fourth. I went into winter quarters with over 100, and into spring bloom with less than 80.

WHAT I OBJECT TO.

Chaff hives, immovable bottom-boards, wire frames, metal corners, reversible frames, fancy honey-boards, moth-traps, drone-traps, and clipped queens, and all kinds of contrivances for preventing swarming, or "catching" swarms.

CHAFF HIVES.

I object to chaff hives on account of their cost. I winter my bees as safely, and with as little loss in Simplicity hives, as in them. I remove the combs or boxes from the upper story, and fill it with dry leaves, see that the colony has from 20 to 25 lbs. of good honey in the brood-chamber, and I would wager swarm against swarm in favor of Simplicity.

PERMANENT BOTTOM-BOARDS.

I object to immovable bottom-boards on account of the difficulty in ascertaining the condition of the colony when packed for winter, without disturbing

the packing. By raising the hive from the bottom-board any mild day I can at a glance tell if any thing is wrong. Is there a mouse among the leaves, or any thing wrong with combs or bees, I see at a glance. Sometimes an unusual number of dead bees appear on the bottom-board. I brush them off and remove the cover, and work my hand down through the leaves to the cloth covering the frames. If the cloth is warm, the bees are yet sound. If cold, all the bees are dead, and you can remove or leave the hive as you please. Another thing: Bees sometimes cluster in heaps around the entrance of the hives or on its sides. People usually say those bees are preparing to swarm. I say, the inside of the hive is too warm; and if they did not come out, their combs would melt down. Raise the brood chamber from the bottom-board $\frac{1}{4}$ inch by the insertion of blocks of that thickness under the corners of the hive, and every bee will go into the hive or field in less than an hour. Never can fifty bees be seen around the entrance or sides of a single hive in my apiary, and have not been seen half an hour at a time in ten years.

WIRED FRAMES.

I object to wired frames on account of the wires. They are no good except the first year, and not much good then, unless you wish to ship them. Let the bees build out the foundation so as to rest on bottom of frame, and the wire is a nuisance whenever one desires to remove the comb from the frame. Their expense and uselessness condemn them, and the same of metal corners. Besides, let an ordinary bee-keeper with his metal corners and metal rabbets to rest on have his fancy hive overturned by some frightened animal, and the queen, with a large number of bees, are gone sure.

REVERSIBLE FRAMES.

Early this season these seemed worthy of trial on account of respectability of recommendation, especially as some frames had a bee-space between comb and bottom-bar. These are the ones I reversed, and in no instance have the bees yet filled up said space with comb. A good queen will occupy all the brood-chamber with brood during her rearing time, and bees have no difficulty in finding the boxes or super-frames in second story.

FANCY HONEY-BOARDS, ETC.

I don't consider it worth while to even say why I object to the fancy honey-boards, moth or drone traps. I object to clipping wings of the queens, first on account of cruelty to animals. Second, it is very troublesome, and frequently fails, without corresponding advantages. About fifteen years ago I Italianized my bees and clipped my queens. I was necessitated to keep all grass from near the front of the hives, nearly spoiling my lawn in order to make sure of the maimed ladies when they ventured forth. I secured a few all right—nice thing—"big Injun." Another swarm issued; I looked and looked and looked to see the queen hopping along, but no queen appeared. I opened the hive, not a single queen-cell to be found. I divided the frames, forming two hives, and filling one out with frames of fdn.; repaired to tree where bees had clustered, severed the limb, and brought them triumphantly back to their hive. They went to work beautifully; and in a few days, on examination I found a beautiful young queen acting as mistress. On another occasion I found my clipped queen balled at the entrance of another hive, a long distance from the one she had left. This closed my clipped-queen

business, and I never have even thought of trying it again. Old queens will die, and young ones will appear, no matter how closely watched, unless, indeed, you handle them oftener than once a week, and life is too short for me to think of handling them oftener than necessary. Bees always alight. I have no doubt about it; they never go off without clustering. Hundreds of swarms have I hived without losing a single one that I saw issue. These fancy things for catching swarms are of no possible account. I have hived fourteen before dinner, with only a single pair uniting, and those I could easily have separated if I had desired.

TELEPHONES.

Two or three years since I received, with other articles sent me by you, a cheap 75-cent telephone. I erected it between my house and honey-house so that the good wife could easily call me to dinner. I thought I filled all directions about its proper erection, but I could hear her call outside of the telephone, and nary a sound distinctly through it; so, down it came, and went among other useless relics of curiosity. GLEANINGS mentioned within the past year its use in bee swarming, so out it came again, one mouth-piece near my table in second story of honey-house where I keep papers and something of a library, while the other was in lower story near the extracting-table, and the wire was made to pass, say, ten feet high above second row of bee-hives down nearly to the end of my apiary, then over the second row across the end to the third row on opposite side, and around over that to honey-house. It works to a charm. I can always tell when a swarm is in the air. Of course, when young bees are taking the first flight the wire gets touched occasionally; but when the touches come like an alarm-bell I can go down, "for they've got there."

SEASON.

This has not been a good honey season thus far, With abundance of white clover and lindens now well in bloom, the cold rains and cool days of nearly the entire month of June have decidedly hindered and impeded the work of the little insects. Bees have not had the swarming fever, only 27 having issued naturally, increasing my number of colonies by 21. Two small swarms I always unite, and the colony casting a second swarm is sure to receive the next swarm that appears. I used to return second swarms to the parent colony, but found they would swarm again, whereas a strange swarm would always remain and give such strength and vigor to the exhausted colony as to insure a fair yield of surplus nectar. I find no difficulty in uniting colonies during the honey and swarming season; and as to the queens, I trust to the principle of "survival of the fittest."

BEE CONGRESS.

I expected to see something more extended in GLEANINGS in reference to the convention at New Orleans. Probably no other body of bee-keepers of equal or superior number, or of equal reputation and intelligence, was ever assembled. The proceedings were conducted in good taste, and must result beneficially.

S. W. SALISBURY.

Kansas City, Mo.

Friend S., there is a good moral to your article; and one commences to see the moral when you start out by condemning so many things. All of us bee-keepers get notions—myself among the rest. We get a notion that a thing is good for nothing, and hastily

throw it aside, just as you did that telephone, because you did not put it up the first time according to directions, or try it till you *made* it work. And on the other hand, sometimes we get hold of a thing that is hardly practicable, and not profitable, and we take a notion to it, so we stick to it until we make it do very fairly; whereas we could have done much better had we thrown it away in the first place. The friends who have some patented notion of their own are an illustration of this. Now, the golden mean would be to look fairly on all sides, and judge impartially. So long as we are human, however, I presume we shall go through life with more or less of these notions sticking to us.

Briefly, it seems to me you have got a notion that chaff hives are of no benefit; and possibly they will not pay so far south as you are. You have a notion, too, that you want the bottoms of your hives movable, while a great many of the brethren will declare that they never want another movable bottom around; and the same with wired frames. We have decided, over and over, that we want no frame in the apiary that is not built on wires. But our business is shipping bees, principally, so we may both be right. It seems to me that if we are going to have a movable frame the best way is to have it movable and removable; but a great many do not agree with me. They find the movable corners *too* movable, and upon inquiry they are accustomed to moving their hives around here and there. We have our hives located as shown in the A B C book, and I might almost say we never move them unless a colony has to be shipped. In that case, of course, we use the spacing-boards. Neither do we have our hives overturned by frightened animals. We never had such an occurrence in our experience, that I recollect. We expect our hives to have a good solid standing-place, and we expect them to stand there, winter and summer. I am astonished at what you say in regard to reversible frames; for it seems to me I could make the bees build those combs up against the bottom-bar by reversing the frame, in 24 or 48 hours, during a flow of honey, without a possibility of mistake.—In regard to fancy honey-boards and moth or drone traps, I should partly agree with you, unless you mean to include the Jones entrance-guard. The latter is a valuable thing to have in an apiary, without question.—Our notions happen to be much alike in regard to clipping queens' wings; but a good many others will have different notions, as you notice.—Now, friend S., in regard to bees *always* alighting, that sentence caps the climax in helping us to decide that you are greatly given to notions. Have you forgotten the perfect hailstorm of facts rained upon the head of poor "Old Foggy" a year or two ago, and the way in which we made him come out of his cover and own up and take back his words?—I am glad you have learned to manage the telephone.—In regard to the bee-keepers' congress, I believe you are right about it; and the reason why I did not have something extended in GLEANINGS in regard to the matter was, that there was so much of it I gave up and advised all to send to friend Newman for a copy of the

A. B. J. containing his very full report of the proceedings. I had my eyes and ears open all the time I was able to be with you, and I hope the accumulated wisdom stored up during those few hours will be cropping out here and there on the pages of GLEANINGS.

THE HONEY-POISONING CASE.

SOMETHING DIRECTLY FROM THE PARTIES CONCERNED.

FRIEND ROOT:—As I suppose I am the only subscriber you have near Branchville, I resolved myself into a "committee of one," and resolved to sift the Branchville honey case. I heard of it at the time, and believe, and so does every one here, that the honey they ate killed those people. That it was gelsemium, I am inclined to doubt; for, if this were the case, why have not others been poisoned by it before? Yellow jessamine blooms in very great profusion here. In our swamps it covers the ground and many of the tallest trees, and the bees work on it as long as it lasts. The honey that my bees made when working on it was white, clear, and as beautiful as any I ever saw, and it tasted better than any other made this year. Our April, May, and June honey is generally dark, but of good flavor. In the fall, that gathered is generally very bitter, and can not be used at all. Next spring I will take some of this jessamine honey and send it to you; and if you desire, you can have it analyzed. I can send you some bitter honey in the fall, also, if you wish.

The yellow jessamine blooms here in great profusion in the earlier spring, say January and February, and sometimes as early as December. Last spring was very backward, and it bloomed in February and March. My bees worked on it in a perfect rush, and made, I suppose, considerable honey from it, as they brought it in, and I could find very few other flowers. I took some comb honey in April that was not all sealed, and ate it, as did my family also, with no bad results. Others about me keep bees, and have done so for years, and this is the first case of the kind that I have ever heard of here. You know more of the nature of honey than I do. Now, is it possible that this jessamine honey is poisonous until purified by the bees, and sealed?

—JERU G. POSTELL.

Orangeburg, S. C., July 7, 1885.

Many thanks, friend P., for your kind services in this matter; and as I said before, if you are out of pocket in hunting up the case for us, send in your bill, and we will pay it.

The following is an account of the matter, from Mr. and Mrs. Dukes, parents of one of the victims:

We certify that we obtained some honey, a portion taken at the robbing of four gums; we also had some other honey, obtained from a different source. Two separate vessels contained the different honey. The family had been eating of the last-mentioned honey for several days, and no bad effect resulted. On the evening of the 25th of May our son Abram, about eleven years of age, ate of the first-mentioned honey, or that which came from the four gums, and had not yet been used by the family. It is supposed that in one hour, or thereabout, the honey began to affect him, producing giddiness, and he said he could not walk without staggering, and said

he was blind. He complained only of general lassitude and slight nausea, in addition to the first symptoms, and within the space of two hours a convulsion came on, and he breathed his last. A couple of days after this, some of the honey of which Abram had eaten was given to a negro woman, who gave it to some children for supper. In the space of one hour two of these children were dead. They complained of this same blindness and dizziness that Abram did, and of nausea, and some pain in the stomach. Two of the negroes vomited, and recovered. Mrs. Dukes ate some of this honey while getting it for the negro woman, and was affected in the manner described above. The report as contained in the *Banner* of June 4 is correct and true in every particular. One of the family of whom the honey was obtained was affected in a similar manner, but vomited, and was relieved without any further evil effects.

JACOB T. DUKES.

MAGGIE V. DUKES.

Branchville, S. C., July 12, 1885.

Many thanks are due you also, my good friends, for your kind services in the matter. May God be with you in your affliction. The report alluded to in the *Banner* contains nothing further than we have already given, except the following clause:

We have often heard it affirmed that in eating honey unsealed, or that robbed too early in the season, there was danger of poison. In the low country a greater portion of the honey is found to contain poison, owing, perhaps, to the abundance and variety of wild flowers in that vicinity. We have often known persons to be made slightly sick from eating new honey, but these cases of deaths above are the first ever known in this section.

I think the writer is correct in his opinion as above, that the honey that would be disagreeable or deleterious, if eaten as soon as gathered, is many times made pleasant as well as harmless by being allowed to ripen in the hives. It is well known, that the honey obtained from onion-blossoms is not fit to eat when first gathered, or when taken from unsealed comb; but if allowed to remain in the hive until thoroughly ripened, the onion flavor will be found to have passed away—or, at least, sufficiently so that it is found not objectionable. Now, another point comes up: From what Mr. P. says, it seems quite unlikely that this honey came from the jessamine at all; and as all the poison honey that we have any knowledge of came from that single log gum, may it not be that the bees by accident gathered some kind of poison prepared to kill insects? As an illustration: It would not be very strange to find honey-dew on potato-tops at certain seasons of the year. Now, if Paris green were sprinkled on these potatoes, and the bees should gather the sweet, we should have honey that would produce, may be, symptoms similar to the above. Can any of our medical friends suggest what the poison probably was, from the nature of the symptoms given? On page 182 of the A B C book, we have a well-authenticated case of poison honey from the mountain laurel. May it not possibly be that the mountain laurel is also found near Branchville, S. C.? Can friend P. enlighten us on this point? You will note, by comparing the description in the A B C, that the symptoms were quite similar.

It is interesting to note, in this connec-

tion, that, 400 years B. C., we have an interesting case of honey-poisoning, as mentioned by Xenophon in his *Anabasis*. The honey mentioned produced a violent form of diarrhoea, and it was only through strenuous efforts of Xenophon that numbers of his soldiers did not die from the effects of the honey.

INTRODUCING VIRGIN QUEENS.

SOME VALUABLE SUGGESTIONS FROM FRIEND DOOLITTLE.

BY request of several I will give the readers of *GLEANINGS* all I know regarding the introducing of virgin queens to nuclei or full stocks, hoping that, by so doing, others may be drawn out until a plan which may prove successful in the hands of all shall be brought to light. Friends Root and Hutchinson tell us that all they do is to let the virgin queens run in, as soon as a laying queen is taken out; but from the letters I receive, and the scores of queens I have lost, I judge that not one out of a hundred can do it successfully.

A few years ago, when I had a lot of 25 very choice queen-cells (which had been sealed about three days), a colony cast an after-swarm; and by my trying to save one of the virgin queens which was with the swarm, she got away and went into the colony where these cells were. The result was, that in less than 24 hours the whole 25 cells were destroyed. Here was a case of a virgin queen introducing herself without any ceremony; and after a trial of several years I find that any colony that has been queenless long enough to have queen-cells sealed and one which does not desire to swarm, will accept of a virgin queen every time; but if given before the cells are sealed, she will be destroyed in nineteen cases out of twenty, unless some precaution is taken more than to let her run in at the entrance or at the top of the hive. As Mrs. Harrison says, "As soon as the queen-cells are sealed, the bees seem to be expecting a queen at any moment, and so accept a virgin queen; while before the cells are sealed they think the queen must be an intruder."

After carefully observing the above I concluded time could be gained by caging a virgin queen two or three days old in the queenless colony or nucleus, leaving her there four or five days until the cells were sealed, when she was liberated, and so far I have rarely failed to get her introduced successfully, and to laying in a little more than one-half of the time required by the cell plan. Again, this has some other advantages over the cell plan; for in this case we can know whether our queen can fly or not, for it often happens that queens have defective wings, myself and others having such queens in hives for a long time, they defeating every attempt we made at getting a laying queen into the colony.

The present season I have been trying a new plan, which is, mixing the bees from several colonies in the wire-cloth box I use in forming nuclei, as given in a former number of *GLEANINGS*. As soon as the bees are in the box, put in the virgin queen while all are yet strangers to each other, and she will be accepted. Let the box stand a few hours in some cool dark place, when they are to be hived on a frame having a little brood, and one of honey; for

to work well a nucleus should have at least two frames. If a queen five or six days old is used, the nucleus will have a laying queen in a few days more, and the first queen from that nucleus is soon ready to be shipped.

Well, so far I am all right; but what I want, and what all raisers of queens wish, is a plan by which a virgin queen five or more days old can be introduced to a nucleus already formed, or to any colony, and have her laying in five days more without danger of having her killed. We have just disposed of a laying queen from our nuclei, and we go and shake one-third of the bees out of each of three into one cage, so as to form one as at first. Put in the virgin queen, and have her accepted. The other two thirds are put in two other cages, so we have three virgin queens introduced, and the bees to put back into our three nuclei again. All works well till I come to put them back into the three hives again, when, during the first twelve hours, five out of six will be killed. This seems to come about by there being bees left in each nucleus, some of which were in the field when the rest of the bees were taken out, and the rest remained sticking to the hive, or flew out when shaking from the combs down through the tunnel. This part of it I do not see how to overcome; and after experimenting and losing many virgin queens, I feel like going back to the cell (or caging virgin queens) plan.

Who will solve the matter for us, so it will be successful every time? If those of us who get a good crop of honey generally are to raise queens for \$1.00 each, we must have a less expensive plan of rearing them than any heretofore given, or we can not make it pay equal to honey, and might as well quit first as last, giving the trade over to those who do not get the honey. This I might so far profitably do; but when I get so many letters saying, "I hereby inclose — for queens of your own raising; remember, I want no others," I dislike to do ought else than to accommodate, and will try to do so, if I can get any plan by which I can raise queens and make it as profitable as raising honey.

Borodino, N. Y.

G. M. DOOLITTLE.

Friend D., the matter you bring up is a very important one indeed; for queen-rearing has advanced quite a step when we are able to take a queen out of a nucleus and put a virgin queen in her place, so old that she may take her wedding-flight, say, the day after she is introduced. The matter was up several years ago, and we succeeded in doing it a part of the time, but it required pretty close care, and a good many mishaps came in. The plan we used was by having a frame of cages for the cells, something similar to the invention of Dr. Jewell Davis, and since adopted by friend Alley, as described in his book. These queens were kept caged in a queenless colony, and let out of the cages one at a time. As soon as the queen released began to lay she was removed, and the next one let out, and so on. This worked pretty well while a flow of honey lasted; but when it ceased, robbers interfered, and finally the young bees got to pulling the legs and wings of the young queens through the cages. A double wire-cloth covering might have prevented this, but it seemed then almost too much machinery. Many of these things worked

nically while there was a steady yield of honey; but when the bees turn to robbing, the whole plan is impracticable.

In regard to introducing virgin queens as soon as they hatch, if I understand you correctly your experience is very singular. It is a regular business with us, day after day and month after month. We sometimes release from 25 to 50 in a day. I have just interviewed Mr. Kimber, our apiarist, and he says, after taking a tested queen out of a strong colony he has difficulty in releasing a virgin queen inside of 24 hours, but with a weak nucleus he seldom has trouble. As a rule, he generally leaves them about this length of time after taking their queen away, that they may become conscious of queenlessness. Then he lets the young queen in at the top of the hive, being careful not to disturb the bees; otherwise they might kill her. During this operation he does not look to see whether she is received or not, and not one in twenty-five is lost, treated in this way. He prefers to wait about 24 hours, rather than to take the time to go around and look them up to see if they are balled, which he would think best to do if he let them run in at the same time he removed the laying queen. We should be glad to hear from others who practice using the lamp nursery, or what Neighbor H. calls a "queen-hatcher"—a number of queen-cells placed over the brood-nest of a strong colony.

Now, then, let us not lose sight of the point; viz., some plan of introducing virgin queens from five days to a week old, and a plan that will permit us to put them in within 24 hours after the laying queen is removed. Of course, we should like to save this 24 hours, if we could, but it would probably occupy so much time that we can better afford to wait this length of time. Another problem is, Where shall we keep these young queens until they are five days or a week old? My experience seems to indicate that they ought to have a considerable amount of room in which to travel about, for their best development. A queen, as soon as she is hatched, commences at once to travel over the combs, and travels about incessantly, day and night, for the first week of her existence. I think she ought to have at least one full-sized comb for a promenade ground.

We have customers, too, who want queens of our own raising. Early in the season, when the greatest demand comes, of course we can not supply this demand. I have tried putting an extra price on queens of our own raising; but if we have got careful men in the South to rear queens for us, why shouldn't they be just as good as any raised here? During this present season, I believe our queens shipped us from the South have been just as good as those raised here, and the queen business this present season is away beyond any thing it has ever been before; and the demand for young queens just commencing to lay has been very much greater than for any other kind; in fact, a great many prefer such queens, *honestly raised*, to tested queens a year old or more, even if the price were the same. The hue and cry against untested queens seems to have passed almost entirely away.

HONEY-THIEVES.

A TERRIBLE PUNISHMENT FOR STEALING A FEW POUNDS OF HONEY.

JUST about one year ago I missed from one of my hives two 6-lb. boxes; in a few days after, there were two others taken, and in about a week there was a Langstroth hive missing one morning. Upon diligent search I found the hive behind the garden fence, with the honey all taken out, and the frames all taken away but two, the bees scattered around in the grass, and a great many of them trampled to death. It was a young swarm put on empty combs, and they had been there long enough to fill them all full of honey and brood, that I know, because one of my boys and I had examined it but two days previously to its being taken.

In about a month after, it leaked out that a certain man and two boys were the thieves, all belonging to different families. The two boys lived less than a mile from my farm. The younger boy was about 14 years old, and to him I concluded to go and tell him what I had reason to believe, and ask him to confess the crime and help me bring the others to justice. At first he denied it, but afterward agreed to turn State's evidence, if I would not prosecute him. I then procured warrants for the other two. The man was arrested; but the other boy saw the officer coming, and ran into the woods and subsequently to Ohio, and has never yet returned, that I know of. The man had an examining trial before two magistrates, was bound over under two-hundred-dollar bonds for his appearance before the circuit court of Lewis County, which was to convene the second Monday in December. As he failed to give bonds he was lodged in the county jail, and at circuit court he confessed the crime, and the jury sent him to the State penitentiary for the shortest term—one year, and where he now is, and will stay till the middle of next December. Our law sends a man to the penitentiary from one to five years, if he steals to the amount of ten dollars. I proved my loss to amount to about \$13.00. The boy who confessed, was the son of a widow, and he promised me that he would never be guilty of such a crime again; but I fear he is again at his old trick, or some one else is stealing on his credit; for within the past month I lost at one time two frames from the middle of a hive, and a little later three more, and within the past week three 6-lb. boxes.

The weather is very dry. Bees are not booming. I came through the winter with 14 stands out of 20; have now 24. Wheat is a failure; grass about half a crop. G. F. HESLTON.

Valley, Ky., July 6, 1885.

Friend H., this seems terribly severe; but I presume the warning will be a wholesome restraint upon others who may think of doing such a thing. Probably the honey obtained in the manner specified above would not have cost, if brought at the proper place, more than a couple of dollars at furthest; but the damage to you in the loss of bees and a valuable queen was probably all you stated, and perhaps more. I believe it is best, as a rule, to follow such matters up, and have the parties brought to justice. This man who led these boys into this scrape is stopped for the present, any way, and we hope for all time to come.

CLIPPING QUEENS' WINGS.

STRANGE ACTIONS OF A SWARM HAVING A CLIPPED QUEEN.

IN July No. of GLEANINGS, page 454, friend Doolittle, it seems, can not help but think the practice of clipping queens' wings favorable, where the apiarist is working his bees for comb honey. I have had some experience in working for comb honey with bees whose queens had their wings clipped, but soon gave up the practice.

About ten years ago I selected a few of my strongest stocks of bees, to be used for the purpose of producing comb honey. I found the queen of each hive, and clipped one wing of each one of the queens, and returned them to their hives. I remember one hive of hybrid bees, of the number I had selected, was stronger in bees than the rest. One day these hybrid bees cast a swarm. After the bees had left the hive I began looking for the queen. I found her five or six feet from the hive, hopping away as best she could. I caught and caged her. The bees did not cluster, but continued flying through the air in search of their queen. After failing to find her they returned to the hive they came from. As they were going in, I released the queen, and let her enter the hive with the bees. As I was working them for comb honey I concluded to let the queens settle their own business matters. The afternoon of the same day, that hive swarmed again. I found the queen as before. The bees, after flying through the air without clustering, came back to their hive. I released the queen, and they all went in together. The next day they swarmed again. I found the queen quite a little distance from the hive, trying to get away as fast as she could. I caught her and watched the bees. They flew through the air for some time, and returned to the hive, but did not enter, but clustered on a tree near by the hive. I thought there might be a young queen with them, and was about to get an empty hive to put them in. I observed the cluster of bees in motion, and it was no small bunch of bees either. In a moment they were all in the air again, coming for their hive, and went in as before. Then commenced the liveliest time I ever saw in a hive of bees. The bees came rolling and tumbling out of the hive, stinging each other to death.

I soon left that hive of bees, without much ceremony; for a while it was not safe for one to go near it. The battle lasted some time. The bees were cross all that day. That night the bees that were left cleaned house. In the morning the ground in front of the hive was covered with dead bees.

Since that season I have not clipped the wings of any more queens. Had that queen been a valuable one, I am very certain I should have let her had I been away from home. Of late years, when the swarming season arrives, and should I be away from home (and I usually am), I practice artificial swarming, and let the queens have their wings.

Canfield, Ohio, July 13, 1885.

A. S. PORTER.

Friend P., the stinging may not have been caused by the disappointment of the bees because the queen could not accompany them. Notwithstanding, it looks somewhat as if that were the trouble. I have never known bees to sting each other because they were baffled in their desire to swarm, but I have

known them to ball the queen, and kill her, and then swarm as soon as a young queen was hatched; and as they loafed around and did little work while waiting for the young queen to be hatched, it seems to me it was a rather expensive business for their owner. A great number of articles have been received in regard to this matter of clipping queens' wings, and we probably shall not have room for them all.

SHALL WE CLIP THE WINGS OF OUR QUEENS?

I clip all of my queens, and would not think for a moment of leaving them unclipped. As far as losing our queens is concerned, when the swarm issues, if we do not happen to see them, this is not worth spending breath about, as I now have 72 colonies of bees, and have not lost a queen on account of having them clipped, this season. I often find the queen has gone back, on going to the hive which is sending forth the swarm; in this case they will generally swarm again the next day. Of course, there will be a queen lost once in a great while, which loss I would not care for if I only knew the hive which lost the queen, and the date of the loss. I think I am safe in saying we shall not lose one queen by having them clipped, while we lose ten swarms and queens where they are not clipped. The reason I make this statement is, I have lost two swarms this season, which have issued unexpectedly with young queens. If you wish, I will give you my way of treating swarms where we wish as little increase as possible.

A. P. COWAN.

Grattan, Mich., July 12, 1885.

FRIEND REPLOGLE'S PRACTICE.

I clip my queens, and could not well get along without. I left a few unclipped last season, and they have given me more trouble than all the rest. One of them came out with a swarm, and started at once to take French leave; but with a vigorous application of dust I succeeded in settling them. Another went with the bees into the top of a tall slender maple-tree, whence they were taken with difficulty and some danger. When a swarm issues with a clipped queen I know where to find her and how to keep her. I seldom have any trouble to get them to settle in a convenient place, by hanging the cage containing the queen in some place where the bees in their flight will be passing around. They find her, I think, by the peculiar odor she possesses. It is only when bees are compelled to return to the parent hive in quest of the queen that they kill her. When a clipped queen gets some distance from the hive the returning bees set up the hiving-note, and she at once, with few exceptions, returns to the hive. This she will usually do two or three times before the bees kill her. To test the question of the queen's odor, I have often, after releasing her from the cage, hung the cage up a rod or more from where the bees had clustered, and they would find the cage and begin to cluster on it as though the queen were still within. I dislike the "artificial swarming" theory. I want my colonies strong. I will not, as a rule, have them divided until the bees will consent to nothing else. It would be better for the world of bee-keepers at large, if those who divide artificially had kept their pet theory to themselves. You know, Mr. Root, that when the bees have little or nothing to do during warm weather they will "hang out" more than at any other time. Then the unscientific bee-keeper concludes they are go-

ing to swarm, and hastens to divide his bees, and the result is frequently an entire loss of his bees, either by immediate robbing or by starvation in early winter.

G. B. REPLOGLE.

Udell, Iowa, July 13, 1885.

CLIPPING QUEENS' WINGS, ETC.

I see in July 1 GLEANINGS, page 451, Mr. Doolittle speaks about clipping queens' wings, and you call on the brethren for an answer. For my part I don't want any clipped queens. I have had two or three in my time, and that will do me. They made me more bother than a dozen unclipped ones. When they would swarm, then I would have to run and hunt for the queen, and about that time the bees were coming back to the old hive; then if I had her, the next thing was to move the old hive; and I think it is a pretty big job to pick up a hive that weighs all together from 50 to 100 lbs. or more, and get out of the way, or they would be right in again. I for my part never saw a swarm leave for the woods before it had clustered, and I have hived quite a number in my time, though it may be. I do not by any means say that they will not.

ALLEY'S TRAP.

In regard to the queen-trap, Alley's trap will be "boss" after you have a swarm in the hive. If you think it might not stay in, just place the trap at the entrance of the hive, and if they come out you will have the queen in the trap. It will do the work, for I had a trial of it.

The bees are doing very well just now. They are making lots of honey, but it is not quite as nice as it might be.

G. M. WAGGONER.

Carlisle, Cumb. Co., Pa., July 18, 1885.

CLIPPING QUEENS; STRAWBERRIES, ETC.

You ask about clipping wings. Let me put in my vote for it. The bees are doing very nicely now. Your experience with strawberries differs somewhat from ours this season. Perhaps it was in the soil, which is a heavy black loam, with clay subsoil, and was heavily manured. Our Sharpless were the poorest berry that we had. They ripened poorly, and rotted badly. True there were some very large berries, but not a *crop*. The Jucundas were our best. Give them a trial, Mr. Root, before you say too much about the Sharpless. FRED S. CLARKE.

Bowling Green, Ohio.

I vote *against* clipping queens, although I have had as high as seven swarms emerge at the same time.

LEONIDAS HUBBARD.

Waldron, Mich., July 10, 1885.

HONEY THAT CANDIES IN THE COMB AS SOON AS IT BEGINS TO RIPEN.

A SUGGESTION IN REGARD TO THE SOURCE OF SUCH HONEY.

MR. ROOT:—Be so good as to advise us what is best to do, in this case made and not provided for: Last year, through Mr. Porter we ordered from you an extractor, with which from twelve colonies we took four or five hundred pounds of honey. But this year, having fixed most of the apiary to be extracted, we found upon beginning, yesterday, that most of the frames are filled with candy. Some ten days ago we extracted over two gallons, which was very thin—some of it not capped over. We found one or two frames filled with young bees, which we gave to nu-

clei which we were building, and put in the place some frames of foundation. We thought we would wait a few days till the bees had finished their work. When we began again, we found all the honey gathered since that time candied, and the frames of foundation worked out and filled with this candy.

In GLEANINGS for 1884, p. 529, Mr. Lower, of Georgia, reports a similar case—at just the same time of year that we find it. I am sure it is the white sumac, for this is the only plant upon which the bees have been working for the last ten days, and from which they have been bringing in a large quantity of honey. I have seen ten or twelve bees upon one cluster of flowers. The black sumac will not bloom for two or three weeks yet.

Last fall we had extracted honey made from the black. It did not candy, though the winter was so cold, and it was in an open house. Now, what am I to do? I can't sell this honey in the frames, and to cut it out and muck it up will be trouble for nothing. I am going, if you don't advise something better, to cut it out and fix it in the section boxes, and let the bees stick it, and then put foundation in the frames, and see if they will continue their confectionery business this fall. If they do, I shall have to dispose of my extractor.

J. C. GORDON.

Joy Depot, Alb. Co., Va., July 13, 1885.

Friend G., I do not believe I would put any in section boxes. You will spoil the reputation of your comb honey. If you could keep it until you wanted stores during a dearth, I think the bees would use it all up in brood-rearing—that is, when you have a dearth during warm dry weather. Perhaps the process given on pages 458 and 459 of the July 1 number might assist you some.

THE TELEPHONE AS A SWARM INDICATOR.

AN ADVERSE REPORT.

SEEING a glowing advertisement in GLEANINGS, concerning the telephone as a success in swarming, I immediately made a rush for telephones, and received two—one running from the dwelling to the shop, and one from the shop into the apiary, which contains $\frac{1}{2}$ acre, in a square. My hives are set in a hexagonal form (50 of them at present), 10 feet apart each way. I ran the wire from the shop through the center of the apiary to the back part, being about 160 feet of wire in all. I fixed up the mouth-pieces, and had every thing in good working order. "There, now," I said to my wife, "I can work in the shop without having to run every few minutes to see if the bees are swarming. Now, boys, you can help your ma, and hoe in the garden, etc. We have got 'em fixed now. I know it will do it, for your Uncle Amos said it would," and so I gave a great sigh of relief as I sauntered toward the shop.

On going in I distinctly heard the wires ting, ting, and it sounded to me very nicely indeed. But I felt a little hurt to think the little fellows were bumping their heads so abruptly against the wires. I worked away, feeling probably as happy as I ever did in my life, when, in less time than I have been writing, I heard the alarm. But it was not the telephone. It was, "Pap! pa- ap! pa- pa! the bees are swarming!"

I made a rush for the bees, of course, and the boys

made a rush for the telephone. But I guess they didn't hear much, for the swarm came off at one side of the apiary, and came in contact with the wire but very little, if any at all. So I soon saw I must have more wires, and went to work and stretched two wires across the apiary, running them into the kitchen, as this is where our "standing army" is mostly located. But, no good. It will answer the purpose sometimes, but not to be relied upon; and, laying all jokes aside, I have lost two valuable swarms by just depending on the telephone. It is up yet; but I think this is the last season that my little pets shall bump their heads against any such nuisance. A. H. DUFF.

Creighton, Ohio, July 14, 1885.

Friend D., it seems to me you are condemning the instrument a little bit prematurely. If your bees spread out when they swarm as ours do, I can't see how they miss striking the wire—at least some part of the swarm; and even if one edge of it should come near the wire, you would have notice enough. Were not those two swarms a little bit erratic in their behavior? The wire should be about as high up as the bees usually go when they are whirling about, preparatory to clustering. I have never before heard of a report indicating that more than one wire was needed. The room ought to be rather still where the sounders are. In a shop where much racket is going on, no doubt they might fail to give notice. See friend Salisbury's report in another column.

WHAT I KNOW ABOUT THOSE SOUR- ED APPLE-SKINS.

IS THERE ANY THING RESEMBLING HONEY THAT
CAN BE MADE FROM IT?

BEING in the fruit evaporating business, I have had a few skins and cores to dispose of, so I will throw what light I have on the subject. It is without a doubt a fact that some of the drying factories do barrel up their skins and cores, and ship them to the large cities and sell them, but that is the extent of my information in that direction, as I have never shipped any off; but I am told that they go to the vinegar factories. From the refuse of 1800 bushels of apples last fall, I have about 40 barrels of vinegar now making, which is quite an important item in the business; for without that I should have been left last season, for the dried fruit did not sell for enough in market to cover the cost of its production. As to their making honey, or even jelly out of the skins after they can get them from the factories, I think it is rather mixed; for I have found that if the weather is any way warm, fermentation will begin in from 10 to 15 hours after they are separated from the apple. I have often noticed that a bushel or two taken off in the evening, if put in a close box or barrel, will be quite hot by next morning; and it is pretty well known that apple cider will not make good jelly, even if it will jell at all, after fermentation has started. But some factories are making a genuine cider jelly, and a splendid good article it is too, from apple skins and cores. It is made by boiling with steam, and in the wonderfully short space of three minutes from the cold cider to the finished jelly. No flavoring of any kind, nor any adulteration, need be used. The inventor of the

rapid process says that every thing used about the works must positively be kept scrupulously clean; and the stock to be used must be fresh; that cider even an hour from the press will sometimes start fermentation enough to prevent its jellifying. Yet I find these makers of pure jelly have as much to fight against in the markets as the honey-producers do; for the markets are flooded with all kinds of bogus so-called fruit jellies that are said to be made of glucose and coloring matter, and flavored to represent about or quite all of the real fruit jellies. I have never yet made any jelly, but have sometimes thought I would. A. A. FRADENBURG.

Port Washington, Ohio, July 8, 1885.

Friend F., be careful you do not fall into the same mistake we are trying to correct, when you intimate that our fruit jellies are adulterated with colored glucose. Are not the fruit jellies to be found in our groceries and stores made from genuine fruit, as a rule? Very likely some of it is poorly made, but that is not a crime like adulteration.

A KIND LETTER WITH SOME SUG- GESTIONS.

ARTIFICIAL SWARMING BY MOVING THE OLD HIVE
AWAY, ETC.

I HAVE tested all the queens that I have got from you this season, and, like all the others bought in former seasons, prove to have been purely mated, and two or three of your dollar queens that I bought this season would bring me a good price as fancy tested queens. I have never lost a queen in introducing, but I have been sadly vexed with the Peet cage. I prefer to fasten the cage on the comb without brushing off all the bees, and it works all right until I go to remove the tin slide when I find them fitted in so tight that it would tear the comb, cage, and all, to pieces. Now, for my use I would have the tin slide fit so loosely that it would drop out, and then secure it with a half-inch wire nail driven in the lap at the top.

My bees are doing well now. I lost about half in wintering. I bought some in box hives after they were too full of honey to transfer, and I divided them by moving them in the middle of the day and setting a hive with a caged queen in their place, as per instructions in ABC book, and the colonies I made in that way are the best for business of any in the yard, and it is the only plan that I could think of to prevent after-swarming with a box hive.

I planted 1000 strawberry-plants last spring. I followed Doolittle's instructions, as described in Feb. GLEANINGS. I like the plan excellently, and my plants are extra fine.

I must thank you again for your kind and prompt manner of filling my small orders.

Burnettsville, Ind., July 6, 1885. A. B. HERMAN.

Friend H., I am very glad of the report you give in regard to untested queens—not on my own account only, but because it speaks well for the friends in the South who have been supplying us. Queen-rearing in the South, before we can possibly get at it here in the North, is getting to be a growing industry. Some of the time during the present season we have been receiving at the rate of from 50 to 100 a day.—Your sugges-

tions about the tin slide of the Peet cage are good, and I will just now give orders to the girls to use no cages unless the slides are loose. The shrinking and swelling of the lumber has something to do with making them tight.—I am glad that you agree with me, that the plan given in the A B C book, for making artificial swarms, is a good one. It is so extremely simple, too, that I have often wondered why a good many prefer plans requiring so much time and machinery about them, to this one. We are glad, too, to know that you succeeded with strawberries so nicely.

AFTER SWARMS.

ALSO A FAVORABLE REPORT OF THE FOUNTAIN PUMP.

IN regard to prevention of after-swarms, I would say that I tried the Heddon plan, as given on page 411, about 25 times last year, and the same number of times the present year. It is a simple, practical method, and, if properly executed, will have as few exceptions as any other rule in apiculture. You are surely right in saying there is no *absolute* rule that will apply to all cases, with bees. To illustrate: In about 30 cases of "modern transferring," one colony would persist in killing the bees of the last drive, in spite of smoke, drumming, or mixing of bees. I consider it the best method of transferring ever published.

With the fountain pump we are not obliged to let swarms cluster where they please. Mine are always *made* to cluster in a convenient place, although the yard is full of very inconvenient ones. With black bees the following plan works nicely: Fasten any kind of a light box to a long pole, the opening at right angles to the handle, and provide it with two short legs, so that it can be set down without crushing bees. When a swarm issues, go to the nearest hive (an extracting super is best), take out a frame with adhering bees, and shake them into the box. They at once begin roaring, and when held just outside the center of the flying swarm, it will bring the cluster to them. The swarm is secured in less time than it takes to tell how to do it, and there is little danger of swarms uniting. If others issue, put the swarm in the shade and cover with a sheet of burlap. I have had swarms come so thick and fast that about one-fourth of each swarm was left to join the next. In this way a neighboring bee-keeper manages to toll the swarms right into the prepared hive.

HEDDON HIVES.

Please ask the friends to suspend judgment on the Heddon hives and fixtures until they have tried at least ten of them for a year or more, for they can't learn to appreciate their advantages, and use them properly in less time. The hive-covers are not meant to *slide* on, as described by Bro. H. Take the cover in both hands, bringing it down to place with a quick back-and-forth rotary movement, and it is adjusted instantly, without killing a bee. The propolis doesn't bother; they don't warp or blow off, and, if covered on one side with bits of comb or bees, turn them over and clean up at leisure. They need only to be used to be appreciated.

I have experimented with foundation as largely as possible the past and present season, and agree with Doolittle and Hutchinson, that much of the

fdn. used in the brood-chamber when producing comb honey, and during a heavy honey flow, is worse than wasted. Limit the brood-chamber to the need of the queen, and force the bees into the boxes at the start, and there can be no question as to the profitable use of the foundation.

I am using the "Heddon contracting method" (see A. B. J., page 437, 1885), altogether this season. It is a long progressive stride in the right direction, and will surely come into general use. Doolittle practices about the same method, I believe. I take great comfort in handling these honeyless brood-chambers. Five solid reversible sheets of brood, no crowded bulging combs or braces, and most of the bees come off with the boxes, and are out of the way when reversing or handling the combs. Now that reversible frames have demonstrated the desirability of reversing, practical honey-producers demand a reversible hive. Such hives must surely be invented before long; and so soon as one appears in the market, of practical construction, and one that does not do away with the laterally moving frame, I intend to adopt it. Take notice: My opinions are also subject to reversal as we progress.

DWIGHT FURNESS.

Furnessville, Ind., July 18, 1885.

POISON HONEY.

Some additional Facts and Suggestions.

CAUTION AGAINST TAKING HONEY FROM THE HIVES, BEFORE IT IS RIPE, ETC.

EDITOR GLEANINGS:—When Prof. A. J. Cook makes a statement, and is supported in it by Mr. A. I. Root, it seems almost presumption for any one to object; but it is possible for any one to be wrong. Prof. Cook says, in the last sentence on "Poisoned Honey," p. 445, that the "nectar which plants secrete does not partake of the qualities of the tissues." You think he has "struck the root of the matter." If this is the correct view of the matter, why do flowers have their own peculiar smell or flavor? If there is no connection between the juices of a plant and its nectar secretion, where does the peculiar aroma of each come from? We know that unless a tree or plant is rich in sap or juice, there will be but little or no honey. We know that honey secretion is directly dependent on a succulent, juicy condition of the flower, and that this condition necessitates an abundant flow of sap from which it can be secreted. Why, then, is not the honey from each class of honey-producing plants flavored by its own peculiar essence? I claim that it is. Why does not white-clover honey taste like that from the willow? Because of the pungency of the willow being lacking in the clover. I have been told here that willow honey is good as a preventive of fevers; that to use willow honey through the summer would be as good as a fever medicine. There is evidently a connection between its sap and its honey secretion, as is evidenced by a similarity in taste. If the honey didn't get its flavor directly from the juice in the flower, where could it get it from? What makes onion honey smell so rank when freshly gathered, and, when capped, be so much milder, yet possessing the flavor of onion nevertheless? Why can an experienced bee-keeper take sample after sample of honey, and, by tasting, say, "This is willow, this is white clover, this is smartweed, this is basswood, this is golden-

rod or boneset or mint or orange," etc.? Whence this ability to distinguish? What property in a plant can we look for to cause? Every honey-producing plant produces its own peculiar honey and no other, and this honey comes from its own peculiar juices, and partakes of the flavor of its own peculiar essence, and, to a greater or less degree, will be found to contain this essence. Unripe honey contains this essence in greater quantity than ripened or cap honey.

I lived some years on the St. John's River, in Florida, among the yellow jessamine. I had a few hives of bees one year, but did not get enough of the honey to know much about it; but the reputation of the yellow jessamine there was then that it is poisonous, and I was told by the natives that it had produced death. How and why, I think I can explain. When the natives got honey in the spring, they either got it by cutting a bee-tree or by "robbing" a box gum; and much of such honey, you know, would be fresh and unripened. You know, also, that people who are not accustomed to eating honey will almost always gorge themselves when getting it in such shape and quantity. A good portion of new uncapped honey of any kind, you well know, will be as good as a dose of pills, and those people not used to bees and ripe or unripe honey do not understand these things. Hence the use of honey is often much abused, and particularly so the yellow jessamine, which undoubtedly has poisonous properties to a certain extent when unripe. It is as good honey as any other when it is capped over.

It is a very great blessing to honey-producers that there are so few injurious honey-bearing plants in this country. Bee-keepers ought to be taught through the bee-journals this one thing: That honey is not fit to market until it has acquired a consistency which, had it been left in the hives, would induce the bees to cap it over. If any one has ever heard of any one suffering from eating capped or ripe honey, let him speak out. It is doubtful if such a case will be reported or can be verified. Let it be generally understood, that no honey is fit for sale that is not fit to cap. If the bee-keepers are not careful, those enterprising newspapers that know so little of honey adulteration, while pretending to know so much, will soon be saying that all the extracted honey in the United States, whether it be white, black, or green, is all yellow jessamine, and certain to kill on the first taste. When the time comes that all our honey is either glucose or poisonous, some of us will have to go out of the business. There are plenty of people of intelligence who, were they to see a statement in a newspaper, prejudicial to honey, would think the statement exactly correct, because it *was* in the newspaper, and bee-keepers should be bold enough to correct these lies whenever they find them. C. M. HIGGINS, 75—139.

Hahnville, La., July 7, 1885.

Friend H., by saying that the talk of Prof. Cook "struck at the root of the matter," I did not refer particularly to his concluding sentence. And this concluding sentence, I am sure, did not mean to convey the idea as you put it; but, rather, that if a plant were poisonous in its juices it would not necessarily follow that the honey secreted by its blossoms would also be poisonous. —I am glad of the additional facts you give us in regard to the yellow jessamine. I have eaten unripe honey in considerable quanti-

ties, but I never experienced any bad effect. Of course, I did not gorge myself with it, for my taste does not lie in that direction. —Are we not in danger of falling into an error, friend H. and other friends, in criticising too severely the course of the newspapers? They are on the lookout, of course, for items; and as their patrons seem to prefer sensational items, no doubt there is a temptation to cater to that taste; but as a whole, are not our newspapers the great educators of the day? What we want to pray for, it seems to me, is for more of a spirit of fairness and truth, and I suppose we all need it. I know for one I do.

LARGE BLACK ANTS.

Another Protection against Moth and Worms.

ALSO SOME FACTS ON AFTER-SWARMING.

GLEANINGS for July 15th came to-day. It always seems like a visit from a friend. I am still making bee-keeping a specialty, and therefore am obliged to make it pay. I try to keep my number at 100, or thereabouts, and have ever since 1873. I remember then you predicted that my enthusiasm would not last, and that I would give up the business. I trust I have learned something about bee-keeping since then. The article from Rev. L. L. Langstroth, on spiders preserving combs was given some years ago, and in 1879 and '80 I used them with success. I discarded them, and for three years I have used the large black ants, which I assure you are very energetic hunters, and will take moth worms out of their burrows. They make no litter, and do not cover combs with webs. To procure them, go into the woods, hunt up a rotten log having a nest of them, take a section with enough of them (say 200) to scour your room. My room is tight; the log is stood in a corner. They never leave it, but make daily raids over all the combs. In the absence of moths they can eat honey or drone brood. I wintered them two winters, and they cared for 300 combs.

I have tried Heddon's plan to prevent after-swarms. It will not always work. Last season it failed eight times, and this season six times. I have a plan which I follow which tends to weed out poor strains of bees, and at the same time prevents after-swarms, and ensures a large surplus yield. It is as follows: Stimulate all good strains early, and get them to swarm first. Make nuclei of their brood and queen-cells. They will hatch, and be laying by the time the other bees of the apiary swarm. When a swarm issues, take the old hive away and hive swarm on old stand, giving one frame of their brood; then proceed with the rest of brood to where one of your nuclei sat. Remove it, and place this hive in its place; then raise the frame with queen from nucleus, and place it in the hive. I forgot to say that I brush off all bees in front of swarm; the nucleus queen with the bees are at once a rousing swarm. The swarm has all the field-bees and many young ones besides. Both are ready to give surplus and all swarming is done for the season.

Clipping queens' wings, with me, still ensures their loss by their being superseded at once.

E. A. MORGAN,
the child that grew so fast.
Columbus, Wis., July 20, 1885.

CARNIOLAN QUEEN FROM FRANK BENTON.

SOME REASONS FOR DELAY.

ON Feb. 19th, this year, I sent \$7.00 to Frank Benton for a fine selected Carniolan queen, to be delivered during May. In about a month following I received a note from Mrs. Benton, acknowledging the receipt of my order, and stating that Mr. Benton had gone to Tunis, Africa, from thence to the Island of Cyprus, to Syria, and Jerusalem, and returning by way of Carniola. Mrs. Benton also stated that she could not promise the queen before the middle of May. Well, the queen did not arrive until July 13. She was mailed June 26th, and therefore was on the way 17 days I live 25 miles N. W. of Philadelphia. She was accompanied by 17 workers, of which 15 were dead; had consumed two-thirds of their candy. The queen is a fine large one, rather dark in color. She was successfully introduced, and commenced laying in two days after her release. The accompanying workers were of about the size of Italians, and the color (with the exception of a few, of a narrow dark-yellow band), pitch black. At the same time, I received a postal card, stating that it had been impossible to get off sooner any Carniolan queen, as there had been experienced great difficulty this season in getting them. He also gave me credit of one dollar, owing to the delay. Friend Root, I think this to be evidence sufficient to convince you of the inability of Mr. Benton to supply you sooner with Carniolan queens, although you had ordered nearly a year ago. I give him credit for supplying his retail trade first. I shouldn't think he would hold back your order for fear of having your judgment passed upon them, and scattered broadcast among Bee-friends while you have not yet seen any Carniolan bees. I will, as soon as some are hatched out, send you a dozen or so.

Hatfield, Pa., July 20, 1885. E. K. BLANCHER, M. D.

Thanks. In regard to wholesale and retail, I had no idea of getting a queen from friend Benton any cheaper than anybody else. I ordered two for fear some accident might happen to a single one. I thought very likely he was unable to fill orders sooner until notices came from different ones that they had received their Carniolan queens. It did not seem to me that their orders were older than mine.

MORE ABOUT THE CARNIOLANS.

On page 422, July GLEANINGS, W. W. Addison makes inquiry about Carniolan bees, and whether they hold out to Benton's description of them. For the benefit of those interested, I will state that I have found them to be all that Mr. B. claims for them, both as to gentleness and beauty. As for honey-gathering qualities, I am not so able to testify, for the simple reason that last year, on account of breeding for queens for myself and neighbors, and the season being poor, I did not get to try them. This year the honey crop, on account of drought (which I hope is but a local matter), has destroyed the prospect of ascertaining the fact; but from the manner in which they have filled their hives with brood, I have reason to think they will hold their own with other good bees, if not, to some extent, excel them. Last fall I took the imported queen and a couple of racks of bees to the Elkton, Md., fair. They were not entered in competition,

but merely as a comparison. From those who saw and handled them while there, I should like to hear an opinion. GEO. H. REESS.

Coatesville, Pa., June 22, 1885.

"MAKING BEESWAX."

MRS. HARRISON TELLS HOW THEY MANAGE IT AT THEIR HOUSE.

I DO not know but I have told how I make beeswax; but perhaps some sister has entered the GLEANINGS circle since, who would be benefited by a repetition. We keep in the neighborhood of one hundred colonies, more or less, and run mostly for comb honey, consequently have but little comb to melt—too small a quantity to warrant the outlay for a wax-extractor. We have not steam to use, as Mr. Root has, but only a stove. I have an all-metal sieve, which fits over a pan; into this sieve I put all bits of comb, and I save all scrapings, every mite. When it is full I put it into the oven when breakfast is being cooked, with water in the pan; and as it melts it filters into the water. The stove should not be very hot; if it is, the water and wax might boil over in the oven. Sometimes when I take out the sieve the residue is dry, like corn meal, and free from wax. I let the wax cool, and then pour out the water from under it. I never let my comb accumulate, but keep it melted up. I always scrape out the sieve every time into the stove and it burns readily. Saving every mite of wax is like saving paper-rags—too little business for most people; but it takes no more time than to waste it, and it is disagreeable stuff to be thrown down in an apiary, to be sticking to the feet, and thereby carrying dirt into the house. I think those who waste their scrapings would be surprised at the nice wax that can be obtained from them, even when there is not a piece of good comb.

After the comb is melted I know it is safe from moths, and so I let it accumulate, when I choose a cool day for re-melting. I choose a pan that will fit one of the iron stove-kettles. One that slips inside, and is held by the rim is best. In this pan the wax is melted over boiling water, with the pan covered. I melt out the ends of a fruit-can, forming a cylinder, which I use to hold a coffee-strainer. I set this cylinder holding the strainer into a small basin, and pour the wax into it; when the basin is full I take it off and set it into another one, and put it into the oven, to keep hot and drain. Before I use the strainer again I knock out the residue into the stove. I use the little pans that I bought for bee-feeders, and I rather like the wax in that shape. I let the wax settle a little while, and then pour it into a fresh pan, leaving the dregs. I keep all these utensils for wax, as it does not pay to clean them every time. I know a woman who melts up all her comb in a bread-pan in the oven, without any water, pouring it off through a hot coffee-strainer as fast as it melts.

MRS. L. HARRISON.

Peoria, Ill.

Why, Mrs. H., you have simply adopted our 35-cent wax-extractor. We sell the dish-pan and all-metal sieve, made so as to fit just right, for 25 cents. I commend your idea of having all the utensils you need kept together, and set away without cleaning. Whenever I see any of our girls trying to clean their utensils by scraping the wax off, I always feel like scolding.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

EXTRACTING VERY THICK HONEY.

LAST summer was a very busy one for me, and I neglected to extract the honey from the colonies run for extracted honey, as fast as they gathered it, but kept taking out the filled combs and putting empty ones in their place. When the honey season closed I had a nice lot of sealed honey in brood-combs ready to extract, but had not any more time to extract it than during the summer, as I thought, so I stored them away and left them until so late that the honey became so thick that I questioned whether it could be extracted at all. But Doolittle, in GLEANINGS of Nov. 1, came to my relief, and told all about now to do it, and last week I tried his plan, and it worked to a charm, just as well as in warm weather, as far as I could discover, except that it had to be done by the side of the kitchen stove, and that is the women's domain; and, "look out" if you should be so unfortunate as to drop honey on the floor, and get it on the door-knobs, etc. After I had finished extracting I was so well pleased with the job that I said to the partner of my joys and sorrows that I would again subscribe for GLEANINGS, as I considered this article alone worth more than the subscription price.

By the way, the extractor I use is a home-made one, the gearing of which is made of an old-fashioned apple-parer, and it did not throw any honey over the top either, that I discovered. All it cost me was fifteen cents for the gearing, and my labor.

Williamsville, N. Y.

JOHN S. SNEARLY.

NAMING THE FRIENDS WHOSE PICTURES APPEAR IN THE PHOTOGRAPH MEDLEY OF THE NEW ORLEANS BEE-KEEPERS' CONGRESS.

On page 389, Jas. A. Nelson wants to know if we can not number the bee-keepers as they appear on our photograph taken at the N. O. Bee Congress. You seem to think not. Now, friend Root, suppose you commence, say at the familiar face of Viallon, on the left of the picture, but to our right as we face it, and call him No. 1, and Mr. Flournoy, of Texas, No. 2, etc., coming on down the line toward the very familiar faces of A. I. Root and Newman. There are just five lines, and numbering them from east to west, or right to left, we could affix the number, and let every man or woman call out his or her name through the journals. By this means I think we could very accurately get every name on the photo. I, too, should like to be in possession of all the names. I never expect to meet these faces again in the flesh, but I should like to have a card appended to my photo, giving all the names in full.

Clinton, La., July 7, 1885. W. F. ROBERTS, M. D.

A COLONY KILLS TEN QUEENS.

I have nine stands in Simplicity hives, all doing well but one. That one's trouble is, killing their queens in trying to build them up in the spring. They kill their queen, and I, according to your instruction, introduced another, and she laid one day and night, and they killed her also. I gave them brood and they raised one; she remained in the hive about four days, and she was killed also, and so on until they have raised and killed eight virgin queens and two laying queens, and they all have remained about four days in the hive before being killed. No eggs of fertile workers have been seen.

I have kept giving them brood to raise queens from, and they have kept up their colony very well. They have filled their comb with pollen, and yet they will have no queen. They have got queen-cells capped over now, and I suppose they will behave as before. Please tell me the cause and remedy.

Jordan, Ky.

A. C. CLOYER.

THE TURNER RASPBERRY.

I notice that Mr. Heddon, in his circular, recommends and also offers for sale the Turner as a great honey-producing plant. As I devote a little of my time experimenting, I will give my experience with the Turner. I have fruited it here three years without any cultivation. I find it very hardy; spreads rapidly, soon takes possession of considerable ground; canes are short, smooth, and thornless; plenty of bloom and ripe fruit at the same time, making its season very long. Bees are on it all the time, so that to get at any of its fruit or bloom would be much like trying to get hold of a balled queen. I think the reason the bees take the fruit here is, they don't find much honey before September. The fruit is rather soft for a distant market; but for a near market, or for home use, is excellent. I never saw so much fruit and bloom on the same amount of ground before anywhere, and I have been over 18 different States. I will here plant it on waste ground only, on account of its rapid spreading. We must experiment, in order to find out which fruits are best calculated for our soil; and while so doing, must expect to meet with some bitter disappointments. The Gregg and Cutbber, that prove so valuable in some parts of the country, amount to nothing on my soil.

STRAWBERRIES.

I believe that the Crescent will be my favorite strawberry; but, Mr. Root, I suppose that you will never plant it, because it often goes by the name of "Lazy Man's" strawberry; that is, being able to take care of itself on nearly any soil.

Nashville, Mo.

JOHN UMHOLS.

Thanks for your report, friend U. It seems to me that our best raspberries are now ready to take a foremost rank in our list of honey-plants. Raspberries, buckwheat, alsike clover, and rape can all be raised with a fair show of being profitable investments.

CARP.

In the fall of 1883 I made a pond about 30x50 feet, partly by excavating, and partly by damming across a hollow in which was a spring. Above this pond I made another dam, in order to throw the surface water into a ditch above, and run it around pond No. 1. I saw it would take but little work to make a smaller pond above No. 1. I did so, and made No. 2 about two-thirds as large as the first. On the 6th day of last May I put 8 two-year-old German carp into pond No. 2. On the 21st of May I saw the first young fish, about $\frac{1}{4}$ or $\frac{3}{4}$ of an inch long. During the summer I have taken from No. 2, 3000 young carp from 2 to 6 inches long, and put them in No. 1, and have sold 500 at \$5.00 per 100.

Minla, Ind.

T. F. WILSON.

GRASSHOPPERS ASSISTING BEES IN GATHERING HONEY FROM RED CLOVER.

Yesterday as I was passing through a clover field I heard the hum of bees at work; and stopping to look around I saw hundreds of bees of all kinds—blacks, hybrids, and Italians, busily at work on the

red clover. As I had never seen many bees working on the red clover before, I commenced to look closer, and found the cause to be this: The grasshoppers, which are very numerous here now, had eaten the flowers off even with the head, leaving the tube of the flower only about one-third long, thus giving every access to the nectar it contained. Bees have not done much so far.

I—IRA WILLIAMS, 4—8.

Georgetown, Iowa, July 4, 1885.

Friend W., the case you mention is novel indeed, and I believe it is the first time that I have heard of grasshoppers being of any use to anybody or any thing.

WHAT AILS THE BEES?—AN ANSWER TO INQUIRY ON PAGE 459.

C. D. Wright, on p. 459, asks, "What ails the bees?" I have had the same trouble, and think I have found out what it is. My bees last fall put in large quantities of fall honey, and some of it was left uncapped. This honey absorbed moisture, and soured in the cells. I have put these combs into the hives for the bees to clean up, and in all weak swarms the bees get drunk and tumble out of the hive. Some get over it and go back for more, but many never get back. I put in two combs to a swarm last evening, and this morning a number of bees were coming out staggering. Metheglin is too much for them, and they get out of the hive into the gutter, like human beings. This soured honey should be extracted before the combs are given to the bees to clean up. I think this soured honey has caused the loss of several nice queens for me this season.

East Saginaw, Mich., July 8. L. C. WHITING.

REVERSIBLE FRAMES.

Friend Root, I am rather surprised that you are in favor of, and bothering with, a reversible frame. "Localities differ;" but with us, any queen that does not fill with brood to the top-bar the shallow L. frame, needs "reversing," and usually gets it quick.

The situation at this date, June 24, with the beekeepers in eastern Indiana, is this: No surplus yet, and only a few colonies that have commenced storing in sections. Bees generally strong, but so far but very little swarming. Weather is unfavorable for the secretion of honey; white and red clover is mostly winter-killed. We still hope for some surplus, although the season here usually ends July 10th.

Our own bees wintered well; lost 5 out of 70, two of which the winter is not to blame for. We were never in more splendid trim, and ready for business, than this spring.

Lyons Station, Ind. JONAS SCHOLL, 65—70.

QUEEN-CELLS AND A LAYING QUEEN.

The two queens I bought were introduced safely; but had I written you about a week ago I would have said that one was killed, because a frame of eggs given the colony at the time contained five queen cells six days later. Would you please tell me why they started queen-cells when they had a laying queen? I can not find any thing about it in the A B C book. 2—GUST. WIEDERHOLD, 3—7.

Yonkers, N. Y., July 16, 1885.

Friend W., your case is one of the exceptions that occur once in a great while. I should say the bees were not quite satisfied with the other queen, and stubbornly pushed ahead with their preparations for raising another. Such cases are so rare, however, that,

in the presence of queen-cells, especially if at the same time we find no bees or very small larvae, it may be considered practically conclusive that the colony is queenless.

SOUR HONEY, AND WHAT TO DO WITH IT.

I have some sour honey, and do not know what to do with it; please tell me. Would it do to feed the bees? and if stored in the sections, would it do to sell? I looked through all of the bee-journals for a year and a half, and did not see any thing about sour honey. I also looked through the A B C.

Blue Springs, Mo., July 17, 1885. G. E. HUGHES.

Friend H., according to my experience the honey will not be made fit for use by feeding it to the bees, although they will often improve it considerably by taking it up and storing it in the combs. I do not know any thing you can do with it except to feed it a little at a time during a dearth of honey from the fields, to weak colonies or nuclei that will use it all up for brood-rearing or queen-rearing.

FROM BLASTED HOPES TO REPORTS ENCOURAGING.

I was almost a fit subject for Blasted Hopes last spring, having lost 75 out of 80 colonies of bees; but remembering that always after a storm comes the sunshine, I determined to try again. I bought 14 one-frame nuclei with tested queens, of friend Oliver Foster (who, by the way, is a square man to deal with). They have done extra well. I got them the 16th of May. All but two have cast very large swarms, and all have made more or less box honey—some 40 to 50 lbs. We got some white-clover honey—the first we ever had here. White clover is just getting started here. We are just through basswood, which was very good this year, and lasts with us eight or ten days. I had a hive on the scales during basswood flow. They brought in from six to eight lbs. a day, and during the night would evaporate about one-sixth. Did you ever know how much honey would evaporate? I have about 600 lbs. of comb honey ready for market now. I am selling at 20 cts. Have now 35 swarms. We get most of our honey here in August and September.

Hillsdale, Ia., July 18, 1885.

E. W. PITZER.

Yes, friend P., I did know that new honey during a damp spell of weather would evaporate fully as much as you mention.

CUTTING SMOOTH SECTIONS WITH A SAW ONLY, AND NO PLANER.

I read with great interest the article in regard to making smooth sections with an ordinary saw. Now, I wish to call your attention to the piece I herewith send you, as a specimen cut with a Simonds saw, 8 inches diameter, 20 guage rim, on a mandrel which has been in constant use for nine years, and has never been trued up or rebabbied. The saw originally had 100 teeth. I cut out half of them. The saw has been in use for two years, and has been set a number of times, and has a slight set now. It requires some care and skill to run a saw so thin as this; but it cuts so "sweet," and takes out so little, it is almost like cutting with a knife. The great secret about this smooth-sawing business, besides having dry straight-grained wood, is to give the saw time to do its work without crowding it. You may hear from me again on the section question.

S. Y. ORR.

Morning Sun, Iowa, July 4, 1885.

FRIEND SHERBURNE'S FEEDER.

I think I have a novelty of a feeder for spring feeding and stimulating purposes which I will describe for the benefit, may be, of some one. I bought the cheapest tin, 10x14, and cut het sheet into five strips 10 in. long, turned up the edges so as to make little pans $\frac{3}{4}$ in. deep, put two or three little slats lengthwise in the pans to prevent daubing the bees. The slats need not be nailed; spring the tin enough to hold them in place, that is all. Set the hive level, and slide them in at the entrance, under the combs. If $\frac{3}{4}$ in. is too deep, make them $\frac{1}{2}$ in., and a little wider; they will hold enough syrup, and will slide readily under the frames or combs of box hives. They can be drawn out by the fingers or a small hook; pour the syrup from a small spout, to prevent running the pans over. Whenever it is warm enough to feed at the top these pans can be used at the bottom, unless the colony is very weak; and for ease and convenience I know of no better. I have used fifty this spring. I am aware that they can not be used in every case; but I should make my hives so as to use them. Their chief merit is, that the top need not be uncovered and warm air allowed to escape; also labor saved in feeding.

ROLAND SHERBURNE.

Lone Tree, Ia., May 18, 1885.

SPASMIC CRAMP OF QUEENS AFTER THEY ARE CAUGHT BY THE WINGS.

Last night, about sundown, we (Mrs. M. and myself) were taking out some queens which were to be delivered next day, and we caught a very nice young Italian queen by the wings, very carefully, too, and she doubled up and died instantly. We then went to another hive (after again washing our hands thoroughly), and caught the queen in the same manner, and she acted exactly like the first one. We closed up the hive after having put both queens in on the frames of their hives, and left them until this morning, when I looked at them again. The first one we caught was as dead as ever; but the other one was all right, and attending to her domestic duties. Neither of the queens could have possibly got hurt any in handling, as we were very careful. Both queens acted exactly alike, and had the same treatment, and they were sisters, and both were laying queens. They had been laying for four days. Now, can you tell me what is the matter? I have studied your A B C until I can repeat it almost word for word, but can find no explanation for the conduct of those queens.

Pickering, Mo., July 9, 1885. G. B. McARTHUR.

Friend M., the above phenomenon is not unusual, and it has been before mentioned in the pages of GLEANINGS. I have never known it to result fatally before, however. But where a queen cramps and doubles up in this way, if she is placed back among the bees she straightens out all right generally.

MRS. HARRISON REPORTS A POOR HONEY YIELD.

The linden bloom has come and gone, and not one pound of comb honey has been taken off this season. This must be one of the "off" years, as the "dishes were all right side up" to gather it. The clovers are blooming, as it has been a showery season, but the nights are too cool for the secretion of nectar. Nearly every day bees are very busy for several hours in the afternoon. There have been but few swarms, and bees are not rich in wax, as they are during some years at this time. Old honey is nearly all out of market.

MRS. L. HARRISON.

Peoria, Ill.

AN A B C SCHOLAR GIVES HIS EXPERIENCE, WITH

A LITTLE PLEASANTRY.

I have had the "hen-fever," and got through it safely, and now I have got a slight attack of "bee-fever," from which I am not yet convalescent. A neighbor died very suddenly. His widow wished to dispose of his bees. To help out, I bought five swarms in old-fashioned box hives, and put them on an old bench, where they have wintered safely (no protection). Last week one hive swarmed. At first I said, "Let them go." They clustered on top of an elm-tree about 40 feet from the ground—an immense swarm. It seemed as large as a half-bushel measure. It was too big to be lost, and so with two of my boys we got up a ladder, cut off the limb, and put the bees in an old shoe-box. Then I drove across the country to a friend's—a bee-keepers even miles off, got an L. Simplicity hive, transferred the bees, and thus got "inoculated." I obtained your A B C book, to find how to treat the complaint; but it only made matters worse. The disease is spreading. I have built some hives have more under way; have been buying fdn.; have made a smoker; propose to transfer all the colonies to L. hives. I haven't got stung yet, but I don't crow any for fear I may. Excuse brevity (?). I only wrote to thank you for the information derived from your book.

Rye, N. Y., June 2, 1885.

A. M. HALSTED.

We clip the following from the *Canadian Bee Journal*, in the department of "Our Own Apiary:"

BEES CONFINING THE QUEEN.

A swarm issued at our home apiary. The foreman removed all the queen-cells except three, and no other queen cells remained in the hive, nor were there any more started. About fifteen days afterward another swarm issued. On examining the hive we found that the bees had actually kept those queens confined six or seven days after they should have gnawed out. One queen had been allowed to hatch, she leading out the second swarm, while the other two queens were in the cells, and, strange to say, the bees had seemingly continued to put wax on the outside of the cells until they were of an enormous size. We cut open the other two cells and liberated the other two queens. They were fine, and could fly as well as queens hatched several days. The wax was more than six times as thick as is usual on ordinary queen-cells. We do not know how to account for this strange freak of the bees; in fact, it is hard to account for some of the things bees do.

Friend Jones, the case you present is certainly novel. We do not remember that we have seen any thing of the kind in our apiary. It is a wonder that the young queens didn't starve, confined this length of time.

HOW TO MAKE A CAVE.

On page 343 of GLEANINGS, May 15, 1885, Mr. D. E. Brubaker asks how to make a cave. I will try to answer the question, not exactly how to make a cave, but a bee-house and cave combined, that will give better satisfaction in wintering bees, than a cave. My friend Julius Topell built a bee-house on this plan, and such a bee-house costs very little cash, only some labor that nearly every body can do who is brought up on a farm in a new country; viz., after the ground floor was excavated about 1½ feet deep, and drain laid (excavation 10 x 16 ft.), studs were set all around 2 ft. apart and outside of these another set of studs so as to make a hollow space 1 ft. apart. After the studs are boarded up with any common or old pieces of boards, fill up this hollow space with dry forest-leaves, then a top floor laid one foot lower than the length of studs;

studs are eight ft. above ground floor, a roof made of split red-oak shingles, one door on south side, one ventilator through the roof and down through the upper floor, and then four feet thick filled up all around with ground, a kind of stiff clay used in this case, so as to keep the earth in place as fast as the earth is filled in; a loose stone wall leans toward the earth, which is built all around up to the roof, on the upper floor (2 feet packed with forest-leaves) put in from the gable ends, and the gables boarded. Mr. Topell put in his bee-house, in 1883-'84, 3 colonies; wintered them all. In 1884-'85, 69 colonies 4 tiers high; lost only 4, and these were very small ones. The hive contains 7 frames of his own make, 8x13½ inches. He lost these by sheer starvation—too much extracting. Now, my suggestion would be for a man of more means to make the inner hollow space of brick, and the outside wall laid in mortar. A plate on this wall, and roof carried over the whole concern, and a double door 4 ft. apart on the south gable; such a building will last a lifetime. My bees are doing well.

Milwaukee, Wis., July 10. RUDOLPH BROWN.

BROOD IN SECTIONS, AND ITS RELATION TO SHALLOW FRAMES.

I inclose 27 cents for a sample by mail of your new perforated wooden honey-board. I had thought of using perforated zinc, but it strikes me that this wooden honey-board may have more stability, and be better every way. I need something of the kind very much indeed, to keep the queen out of the sections. When I used a frame 19 inches deep in the clear, it was very hard to get bees to work in top boxes at all. Then I went to work and cut them all down to eight inches, and, whew! nine out of every ten had brood of all kinds in the sections, including lots of queen-cells. All this gave me lots of trouble, and I am resolved to have no more of it.

Lynd, Mass.

P. R. FREEMONT.

FEEDING EGGS AND MILK; ALSO SOME SUGGESTIONS HOW TO MAKE BEES DEFEND THEMSELVES.

Dzierzon, on page 258 of his "Rational Bee-Keeping," tells us something about egg and milk feeding. I should like to know if it has been tried in this country, and how it works; how much to feed, and how to feed it. Would there be any sugar saved by feeding them? I wish you would tell all you know about it, as there will be more than one poor bee-keeper at his wit's end to know what to do in the spring, after such a poor season as this has been. We always have plenty of eggs and milk about that time of year.

I had quite a time getting my bees ready for winter. I had to feed 600 lbs. of granulated sugar, and they had robbing on the brain the worst I ever saw. Feeding is the best thing I ever tried, to make bees fight that won't defend their stores. Did you ever try it? If you didn't, the next swarm you catch that way, you try feeding them about one pint in the five-cent feeder for about two nights. If they don't spunk up, then stir them up the third morning, and leave the feeder in front of the hive a while. They will boil out to defend their old dry feeder when they won't defend their stores. After they get to fighting, take the feeder away, and they commonly keep their "dander" up. I worked several colonies that way last fall, and it never failed. I packed my bees in L. hives, with division-board, and forest-leaves at the sides, and chaff cushions on top. I wish I had the leaves out and chaff in their

place. I put them in when they were dry and brittle, and packed them in tolerably tight, and they drew dampness enough to make them swell and push the boards in some. B. T. BALDWIN, 25-43, Marion, Grant Co., Ind.

SOME EXPERIMENTS IN WAX.

As the question comes up a good many times among our bee-journalists and bee-keepers, as to the amount of wax contained in old combs, I will give you my experience in this matter. In my first lot I had 7 lbs. of comb, in about half of which brood had been reared once only. This yielded 5 lbs. of pretty white wax. In my second lot I had 3 lbs. of combs, all ages, from one to five years old; this yielded me 12 lbs. of nice clear yellow wax. In the third lot I had 17 lbs. of combs, old and dark, all of it; some of it I knew to be ten years old, and none less than two years old, and very little of it but that was six and seven years old. This yielded 4 lbs. of dark yellow wax.

From this it may be seen that new combs are almost or quite all pure wax; combs three or four years old contain about two-fifths wax, while combs six and seven years old only about one fourth or less of wax.

To cut up sheets of wax or foundation, use a butcher-knife, as you advise (sharp), and keep it wiped on a rag saturated with kerosene oil. This does not injure your fdn. in the least. In this way I cut fdn. easily, thirty to forty sheets high, clear through, without any more difficulty than cutting eight or ten sheets high, as there is no sticking, and you may cut as deep as your knife is long, or nearly so.

Goldsboro, N. C., May 24, 1885.

3. ARBOTT L. SWINSON, 41-59.

Friend S., your experiments are interesting as well as valuable. We should infer from your deductions, that it does not always pay to render up old combs.

HORSEMENT HONEY.

I send you, by to-day's mail, a sample of horse-mint honey. What do you think of it? and how does it compare, in your opinion, with white-clover and basswood honey of the North? What is it worth in the Northern markets?

C. A. WHEELER.

Brighton, Texas, July 11, 1885.

Friend W., your sample is beautiful—clear as crystal, good body, and beautiful flavor. There is just a little trace of that peculiar odd flavor especially belonging to horsemint honey, but it is so slight that I should think the honey ought to compare favorably with any clover or basswood honey made. In fact, I believe I should like a good dish full, like the sample you sent me, better than either clover or basswood; but I might in time tire of it quicker. I could not say what it would bring in the Northern markets, for there is a prospect that honey will have to be sold very low this season. See honey quotations on page 475.

RASPBERRY HONEY.

I send you a sample of honey made from red raspberry only. Bees don't work on white clover nearly as well as on red raspberry, which is roaring all day with bees. Don't be afraid to taste of it.

Cedar Creek, Wis., July 13, 1885. N. HANER.

Friend H., the sample of honey you send is beautiful. It is so much like white clover that I should be inclined to call it an extra-

fine specimen of clover honey, although it has a flavor slightly different when one notices carefully. I believe it is also of a deeper straw color than clover honey. If it is always like this, I should say that the honey from red raspberry will rank equal to any clover honey made, although the honey may be a little more "on the straw," as I have mentioned. Now, then, friends, we can get raspberries and honey too, therefore red raspberries are a safe honey-plant. We have just been sampling some specimens of the Marlborough raspberry. The plant is a wonderful grower. The berries are very large, and of excellent flavor. If full-grown plants fruit as well as our little ones less than two feet high, we want a big plantation of Marlboroughs.—We notice a good many speak of the red raspberry being especially a honey-plant. Don't bees get honey from the black raspberry also? We have not had an opportunity of testing it on our grounds. All that we have in full bearing are red, and the bees are extremely fond of them.

BEES BALLING THEIR OWN QUEEN.

Referring to Mrs. Harrison's inquiry on page 445, I should like to instance a case which has recently come under my own observation. I have a very fine and prolific Italian queen which was hatched last August, and wintered on three frames. Soon after spring opened this colony increased to eight frames, all filled with brood. About this time I commenced taking frames of brood from them for other colonies, giving them frames of full fdn. in place, and have kept this up till the present time. About ten days ago, upon opening this hive I noticed a ball of bees, and by smoking them I found the old queen in the center. After being liberated, she seemed frightened—running about on the comb, and was immediately caught by the bees and balled again—this time by a larger ball than before. As I was afraid they would kill her, I caught her and caged her in a Peet cage, on the comb, with the slide out. After a few days she was out attending to her business, and the bees all well disposed toward her. This colony was full of bees, with plenty of brood, honey, pollen, etc., and was in every way prosperous. I give you the facts; and as I am young in the business I will refrain from comments. C. W. COSTELLO.

Waterboro, Maine.

CARP FOR THE TABLE, AND HOW TO COOK THEM.

We have carp over here in Kentucky. They are wonderful growers, but they do not make a good bill of fare for every one, by any means. If you take them right from the pond and fry them they will taste of mud. I took one from my neighbor's pond, and it had a flavor of cold cabbage. This taste may have been given by feeding cabbage from the table, which I understand was done. If so, it shows that we may improve the quality of the fish by proper feeding. Indeed, we had about made up our minds to keep them from our table, but lately we have been successful in preparing them. We now kill and dress, and scald the skin off, as you would a cat-fish; then put them in salt and water until next day, then bring to a boil in clear water. Now bake or fry, and you have a very good fish, but not equal to the best fish of our county. We had one to-day for dinner, weighing about 5 lbs., prepared in this way, and it was pronounced a very

good fish. If you have any better way of preparing them, please let me know. H. C. HERSPERGER.

Keene, Ky., July 13, 1885.

Friend H., I think if you will try feeding your carp on some other kind of food shortly before they are taken for the table, you will find the quality of the flesh all that you may desire. This matter is very fully treated in the A B C of Carp Culture. You may have corn-fed fish as well as corn-fed beef.

HOW THOSE STRAWBERRIES TURNED OUT.

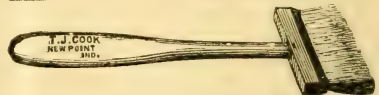
In April, 1881, I put out a whole town lot, which is 50 ft. wide by 150 ft. long, in strawberries, of which I had 17 different varieties, all of highly recommended kinds, of which the James Vick has been a total failure; the Windsor Chief, the largest berry; the Manchester the very latest, and a good bearer; but the old Wilson and the Crescent have been the most profitable, both affording good berries from the first to the last, and both kinds producing more than double what the most of the other kinds have done. Well, this is how they turned out: I have to-day, July 4, picked and sold 22 quarts, which is the last. Total, 666 quarts, or 20 bushels and a half, all of which have been sold or used at home, except 48 quarts shipped to Dennison. Average price 10 cts. a quart. Largest picking in one day, 84 qts. Next.

A. A. FRADENBURG.

Port Washington, O., July 4, 1885.

COOK'S BEE-BRUSH.

Many of the friends have declared they much preferred the old style of bee-brush invented and manufactured by our old friend T. J. Cook, and we have just made arrangements to furnish them again, as well as the Davis brush, which is just now having such a large sale. The letter below explains the matter. It also tells us something about how to use either the Cook or Davis brush.



THE COOK BEE-BRUSH.

We give a cut of the Cook brush as it was made before he died; and in accordance with friend Davis' kind offer we are prepared to furnish them at the same price as the Davis brush; namely, 15 cts. each. If wanted by mail, 3 cts. each extra for postage.

I send you by this mail one of Cook's brushes improved. When you get it unwrapped take out the tack, put in the handle, drive in the tack again, then dip the brush in water up to the head, then smoothe it out with the hand and let it dry, and the brush is ready for use. I send it that way to prevent getting broken in the mails.

Theodore J. Cook was a cousin of mine, and an only child of James and Elizabeth Cook. He was as fine a young man as ever marked this country, a member of the Methodist Church, and I think a true Christian. His parents are very wealthy, yet Theodore never indulged in any thing bad in his life; and, friend Root, you have no idea how it would please uncle and aunt to know that his brushes are still wanted. C. F. Muth thinks they are ahead of my brushes yet. J. S. C. DAVIS.

Ballstown, Ind., July 4, 1885.

LOW PRICE OF HONEY IN CALIFORNIA.

There has been a large amount of first-class honey sold here at $3\frac{1}{2}$ cents per lb., to be shipped to Europe—a very low price, I think, as a case with two cans costs a dollar cash, and each case had to be strapped with strap iron at both ends and middle. There is supposed to be a large amount of honey in first hands yet, in this county. I have on hand about five-sixths of last year's crop, which I feel inclined to hold for a better price than the above. I disposed of a small amount of honey at the stores, for whatever I can get; take pay in trade, no cash. Although honey is so cheap, the storekeepers tell me that they sell 10 or 12 lbs. of syrup to 1 lb. of honey. I wrote recently to England to inquire about the prospects for disposing of honey there, but I am advised not to send any honey there, on account of so much adulterated honey that has been sent there. The English are suspicious of all foreign honey. Several of my neighbors have sent honey to the Eastern States, with results rather discouraging. Can you give us any late information about the practicability of the Stanley automatic extractor? CHARLES WEST.

San Bernardino, Cal.

A LITTLE "PLEASANTRY" IN HIS EXPERIENCE IN WINTERING BEES.

I lost all but one swarm last winter, wintering on summer stands. I think these open winters (open to criticism) are very hard on bees left on summer stands. We have a very good winter-house in which we have wintered our bees several winters very successfully. It is warmed by steam-heating pipes, and the temperature is never as low as freezing. But as others were wintering on summer stands with apparently good results, we were induced to try the experiment, expecting, of course, we should have an open winter. Well, we have got the experience; but, the bees! oh, where are they? I really don't know, unless they are in somebody's apiary who has exercised a little more judicious care and judgment than I have. But I want some bees, even if I do feel somewhat guilty of committing bee-slavery in the first degree.

I am not keeping bees for a business, but merely for the pleasure of it. I am very fond of the saucy little imps, and I like very much to work with them when I have the time to spare. I am superintending a large oil-works here, owned by Mr. E. E. Clapp, of President, Pa., and my time is nearly all occupied in that direction; but still I find an hour or two nearly every day that I can give to my bees.

W. G. SAMPSON.

McGraw, Warren Co., Pa., May 18, 1885.

SETTING HIVES CLOSE TOGETHER; ALSO SOME FACTS AS TO WHETHER BIRDS KILL BEES.

GLEANINGS especially mentions the setting of hives close together. Well, I do it. Yes, after reading all that GLEANINGS has said in regard to it for the past three years. I use scantling 2×3 inches, and 16 ft. long, raised 10 in. from the ground on brick pillars, as benches on which to set my colonies and nuclei of queen-rearing hives. Of my full colonies I usually set 9, facing all the same way, on one of these 16-foot benches; of the nucleus hives, which are made to hold 6 L. frames, with a partition between each three frames, and a hole bored, one at each end, into each nucleus, so that one nucleus in these double hives works out back and the other

side front, I set 8 of these double nuclei to a 16-foot bench, thus having 16 three-frame nuclei on a 16-foot bench, entrances being about 2 ft. apart, front and back. They are mostly of one color, too, but I don't think that is advisable. I should prefer to have each alternate hive of a different color. I have never had any trouble with my full colonies, set as above. Out of 100 queens reared and mated from my nuclei so set this spring, I have had only two lost, or had four queens disappear before they began to lay, after being hatched. I think the most of our queens which disappear before laying do so because they are caught by birds and insects. During last September and October I lost nearly half the queens I had hatched out from my nuclei, before they began to lay; so this spring I kill all the bee-martins and any other birds that I find around that are catching any bees. Hence I have lost scarcely any queens from my nuclei. I have them all numbered, and I keep a record of the time of hatching out, the first eggs laid, the taking-out of a queen, the giving of a cell, etc.

3—ABBOTT L. SWINSON, 44—55.

Goldsboro, N. C., June 12, 1885.

Friend S., your arrangement will work very well, providing you do not have your rows too long. For instance, where the row is only 16 feet in length, the bees will count, as it were, the number of their hive from each end. Should you continue this row 100 feet, however, I think you would find that, with the exception of a few near each end, the rest would all be mixed up.

SOME UNUSUAL EXPERIENCES IN QUEEN-REARING.

Last year I wrote you an item concerning a rather unusual performance of a queen, published in Nov. GLEANINGS. From your remarks, I see you misunderstood the case, and intended to correct your impression before. While painting a cover, some of the paint ran through the cover and fell on some of the bees, the queen among others. The next day they swarmed, I put them in a new hive. Two days later they showed great agitation, as though they had lost their queen. The day following I found twelve queen-cells started; and on opening the old hive I found the queen there. The odd thing was, not that the queen was marked (though perhaps it was odd that she should be one of the dozen marked), nor that they started twelve queen-cells, but that, two days after they swarmed, the marked queen was with the swarm in the new hive. I saw her there, and the next day she was back in the old hive, and the swarm still stayed in the new hive. She was a pure Italian daughter of an imported queen; the queen the swarm raised was a hybrid.

A few days ago, finding a three-year-old queen giving signs of failing, and that there were several queen-cells found in the hive, I concluded to let the bees raise a queen; but fearing that the new queen might inherit her mother's weakness, I removed the cells and gave them a frame of brood with cells from one of my best queens. The cells were sealed. Four days later I found they had started three new cells, and had sealed them. I removed these; and seeing that they were rather shorter than common, I opened one of them. It contained a live worker, sealed up head down. The bee was just able to crawl when I released her.

A neighbor some time since had a queenless colony. He gave them at different times over a dozen

queen-cells, but they tore them down before the queens hatched. He gave them brood and they started cells, but tore them down before they hatched. He introduced four virgin queens, and they destroyed them all. Finally, finding a queen-cell remaining after it ought to have hatched, he opened it and found a worker-bee sealed up, head down.

S. J. BALDWIN.

Nelson, Ohio, July 13, 1885.

REPORT FROM OUR NEW \$6.50 LAWN-MOWER, ETC.

I received the lawn mower and scale in ten days after being shipped. The mower is all you recommended it to be. I cut grass that was four or five inches tall. I have thought a good many times I would write and see why you did not keep one for sale, for I knew you could sell one for less than \$12.00. That is the least you can get them for here.

Bees are doing well here. I have one swarm and will make 125 lbs. honey in 1-lb. boxes; some that gave two swarms that will make three crates, each 28 boxes per crate. New swarms are doing just as well. Some will make from two to three crates. I shall have lots of honey.

5—Geo. E. JONES, 18—45.

Northfield, Minn., July 25, 1885.

ADULT BEES CAN SECRETE WAX.

SOME INTERESTING EXPERIMENTS WITH THE OBSERVATORY HIVE.

FRIEND CONNELLY proves to his own satisfaction that worker-bees can *not* secrete wax (see pages 164 and 165, current volume); but if he will repeat my experiment he may be convinced of his error. On the morning of June 6th I placed in my observatory hive one frame of brood about three-fourths capped, and one frame of eggs and larvae, brushing off *all* bees; then watching my opportunity when no bees were flying about a certain colony, I closed the entrance and removed the hive to a new stand, setting the observatory hive in its place. The returning workers, after much hesitation, finally entered, took a careful survey of both combs, deposited their loads, and departed for others. But they soon discovered that this plan would not meet the emergency; for about an hour after, I observed that many bees remained on the combs; and at 3 p.m. both combs were quite covered. Next day many bees were hanging in festoons, and the 8th inst. all the brood was capped, and two queen-cells nearly completed. The four following days were stormy, and I took no notes. On the 13th instant I found the two queen-cells capped, and also about half of the larvae. Now, as none of the brood in the nucleus had been hatched yet, is it not evident that worker-bees can secrete wax, and act as nurses? It is evident that *old* bees will participate in this occupation; for during this time, outside operations were almost entirely suspended.

BEES CAN TRANSFER EGGS AND LARVÆ.

Last month my observatory hive gave me an opportunity of witnessing the transfer of a very young larva from the lower edge of one comb to an empty drone-cell, situated a little below the center line of the comb in another frame. A queen cell was completed, the queen hatched in due time, and is now laying. I have long suspected that bees could transfer; but this is the first time I could "catch them in the act." So much for an observatory hive. From many incidents in my experience I have concluded

that bees prefer forming queen-cells near the center line of a comb; and if the larvæ at that place are too old, the bees will either transfer, accept a "laying worker," dwindle, or abscond. The exception only proves the rule.

THE ADVANTAGES OF A SLANTING ALIGHTING-BOARD.

Brother Heddon says, "I find no gain in having a slanting alighting-board for bees" (see p. 84). He is a bold man who will venture to run a tilt with so noted a warrior as Bro. H.; but I have no fear; for "thrice armed is he whose cause is just." Notwithstanding I will "call a parley," and say, "Come, let us reason together." Every careful observer of the habits of the "busy bee" must have noticed that it always alights, if possible, on its hands (*i. e.*, front feet), and never on its feet (hind legs)—please excuse the Hibernicism—evidently, and for very good reasons, being very careful of its abdomen. When approaching a hive it slackens up; its body inclines to an angle of about 45 degrees, in which position it is easier to alight on an inclined or perpendicular surface than on a level. If Bro. H. will spare a few minutes from his active duties he will probably notice, as I have, that many bees will alight on the extreme outer corner of his level board, and leisurely walk into the hive; whereas, if there were a slanting board or a two-inch auger-hole, they would alight at the very entrance. Furthermore, a slanting board is always dry, which can not be claimed for the level board. For these reasons I have adopted, after many adjustments, an alighting-board 2 inches wide, $\frac{1}{2}$ in. thick, and 20 $\frac{1}{4}$ in. long, nailed at an angle of 45 degrees, just 3-16 inch below the upper edge of a similar strip, which has three saw-kerfs 3-16 inch wide and deep in said upper edge, and is fastened by two small screws to the bottom-board of my Simplicity hive, flush with its upper surface. The hive can thus be readily adjusted for the entrance of three worker-bees only, when desired. I admit, that it is easier for the apiarist to adjust the entrance by means of the triangular blocks, instead of sliding the hive forward or back; but I dislike so many loose traps, and have an especial care for the comfort of my bees. If Bro. H. has adopted the level board after fair trial, I can't expect him to apostatize; but I think many others in the fraternity will prefer the slanting board for the reasons stated.

T. WALDRON BARTHOLOF.

Honolulu, Hawaiian Islands, June 15, 1885.

Thanks, friend B., for the valuable facts furnished. I have for years been satisfied that the laboring bees from the fields, and even old ones with ragged wings, can secrete wax, and rear queens too, when forced to. We have been for a long time aware that bees can transfer eggs and larvae, although I do not know that any one before has seen them doing it.—From your description we infer that you allow the bees to enter your Simplicity hives from the side instead of the end, although you do not say so. I, too, should prefer a slanting alighting-board, if we could have them without too much expensive machinery. The alighting-board figured in our A B C, you will notice, has a slant on the front edge of the three-cornered blocks; and as we usually have the sand just below the alighting-board on a slant, it seems to answer the purpose. The alighting-board to the chaff hives is always made at an angle of 45 degrees.—Your plan

of arranging the entrance, so you can easily contract it so as to admit only three bees, is very good; but when you get to admitting more than three you are obliged to give the entrance the whole length of the hive—nearly 20 inches. Is not this a pretty broad passage-way? I much prefer to slide the hive backward and forward, in place of having loose blocks.

BEE BOTANY,

OR, HONEY-PLANTS TO BE NAMED.

WILD DESERT-CURRENT.

HEREWITH send a specimen of wild desert-current, which is at this date blooming to its fullest extent. I now send blooming branches, and in April will send fruit. A shrub or bush from 3 to 6 ft. in height, forming a dense bunch from 4 to 10 feet in diameter—that is, a single root—will have from 50 to 200 stalks, the size of your finger. The foliage is evergreen, leaves thick and fleshy; small twigs, spinous, like the twigs of an apple-tree; fruit, when ripe, a beautiful cardinal red, many-seeded, like a gooseberry or currant; oblong in shape. The bloom secretes an abundance of delicious nectar which my bees are now appropriating very rapidly.

J. L. GREGG.

Tempe, Arizona, Feb. 16, 1885.

Prof. Devol says of this plant:

The wild desert-current from J. L. Gregg, is properly so called. It is a species of *Ribes*, closely resembling *R. aureum*, Ph., the Missouri, or golden currant, and is perhaps a variety of the latter. Nearly or quite all the members of this family (*Saxifragaceæ*) produce an abundance of bee-food. It is hard for us to realize that it could be in full bloom there in the middle of February, when here in Central Ohio the thermometer was ranging as low as 20 degrees below zero. The Missouri currant blooms here in April and May.

W. S. DEVOL.

Columbus, O., March 7, 1885.

I send you a plant to be named. The common name is "arrow-bush," so named because the Indians here all make their arrows of the switches, which grow very straight. It is a bush or shrub from 4 to 10 ft. in height, and it grows mostly in the sandy river-bottoms, making a dense jungle of evergreen brush, sometimes hundreds of acres in extent; and were it not for the plow it would take our upland farms, owing to the seeds being winged (or having a tuft of cotton attached to each seed). They are borne by the winds all over the country, and readily germinate when the ground is irrigated. It bears a reddish-purple flower which secretes a great abundance of nectar, almost limpid. I think it is equal in quality and quantity to the far-famed basswood. When my bees were at work on it I extracted every third day, and the honey was much thicker than basswood. It bloomed about the first of last April, and continued in bloom till near the first of June; but the last two weeks the honey became so thick that the bees quit it for the mesquite and cat's claw, two honey-bearing trees of the locust family; but it again came in bloom the latter part of Nov., and continued till some two weeks since, when we had a cold spell, the mercury indicating 32° above zero, which stopped the blooming process, as you will see by the specimens sent.

Some of it contains seeds and flower-buds unopened, but I send two bunches of flowers wrapped in a separate paper, and placed inside the package.

Tempe, A. T., Jan. 19, 1885.

JNO. L. GREGG.

Prof. Devol says further:

The specimen from Dr. Gregg, of Arizona, was duly received. The flora of the West is not all worked up well, and it is not always easy to determine what a specimen is; and in this case I was unable to identify it. I therefore sent a part of it to Dr. Gray, to get his opinion of it; and in awaiting a reply I caused this long delay. It is a species of "Marsh fleabane" (*Pluchea borealis*, Gray), not described in the older botanies, but found in Dr. Gray's new work, "Synoptical Flora of the U. S."

They are strong-scented plants; growing very persistently, mostly in wet or moist places. The bright-colored pappus gives the plants the appearance of being in bloom long after the flowers have faded.

W. S. DEVOL.

Columbus, O., Feb. 19, 1885.

Please find a specimen of what seems to be quite a honey-plant in this section—the Upper Sierra. It is remarkable for its singular beauty. My bees have been working on it since early in April. It produces honey and pollen; is an evergreen, and a shrub, about one foot high. There are hundreds of acres of it around here. I do not know the botanical name for it. They call it tar-weed here. It grows along what is called the snow-line of the Sierra, and many times is six or seven feet under snow, but comes out as fresh and green as if it had been summer all the year, and puts forth its modest little flowers at the first appearance of spring. I have started in the bee business as an experiment here in the Sierra Nevada. I think there are some valuable honey-plants here. I am the only man in the county who is keeping bees for a business. The winter is no problem here, as it never gets to zero. We have deep snows, but no frozen ground. I will report on my success at some other time.

G. W. COVER.

Douneville, Sierra Co., Cal., June 12, 1885.

Concerning this plant, Prof. Devol says:

The inclosed plant from Colorado is called by Dr. Gray *Chamaelirium foliolosa*, and is a plant I know nothing about. From the small specimen sent, it looks as if it were a very pretty shrub.

W. S. DEVOL, Botanist.

Columbus, O., July 6, 1885.

WHITLOW GRASS.

Inclosed you will find a sample of a weed I send you. Please tell me what it is. It puts up in the winter; begins to bloom in February, and lasts till April. Bees do not gather pollen from it. I will give you more information in regard to it when it is through blooming. I will send you some seed of it when it is ripe.

J. W. RANSAVILLE.

Brandon, Texas, March 18, 1885.

Prof. Devol replies:

The plant referred to above is *Draba*, or whitlow-grass (*Draba cuneifolia*, Nutt.), an early-flowering low herb of the mustard family, found south and west. It is hairy, leafy at the base, and throws up several racemes of small white flowers, 3 to 8 inches high. The petals are about twice the length of the sepals, notched at the end. One of the earliest-flowering plants.

W. S. DEVOL.

Columbus, O., March 25, 1885.

FALSE STATEMENTS IN REGARD TO THE HONEY BUSINESS OF OUR COUNTRY.

As a protection to our bee-keeping population, we propose in this department to publish the names of newspapers that persist in publishing false statements in regard to the purity of honey which we as bee-keepers put on the market.

PLEASANTRIES THAT MAY BE DAMAGING.

THE following is perhaps deserving of a place in the column of False Statements. It is taken from *Form and Fireside* (Springfield, Ohio), issue of May 1, 1885, page 268, under head of "Little Bits."

"Why do bees make wax?" asks a farm journal. We do not know, unless it is because no one has told them that the honey manufacturers are willing to make it for them out of paraffine.

Of course, this is a pleasantry; but nevertheless it carries the same harmful impression as if it were stated in sober earnest. The publishers of *Form and Fireside*, a paper so sound and practical in its agricultural teachings, should not give circulation to such false reports, even in jest; for the mass of the people will take it as a fact, that honey is manufactured, and will accordingly be prejudiced against it. If I mistake not, they have a good many bee-keepers on their subscription list; and at one time you advertised with them. I think that they will be ready to correct any such statements which are so damaging to our business.

SAMUEL A. MILLER.

Newark, N. J., July 9, 1885.

Friend M., I agree with you. It is wrong to repeat or allude to any piece of scandal in jest, even though the parties who write may be fully aware that it is a fraud and a humbug. Thousands of people suppose that it is so, that comb honey is made out of glucose and paraffine.

MORE ABOUT PARAFFINE AND GLUCOSE COMB HONEY.

Imitation honey is made of paraffine comb filled with glucose, according to the *Scientific American*, which has analyzed several samples.

This paragraph needs retraction. I take much interest in reading "False Statements," especially as you put them. I think all bee-keepers should have the eye of an eagle, to discover and point out such false statements, and let us show them up and make every publisher retract the libel, or give them a standing advertisement in GLEANINGS.

Harrisonville, N. J., July 6, 1885. J. D. COLES.

Thank you, friend C. If any of our readers have noticed any such statement in the *Scientific American*, they will confer a favor by telling us what number and page. The editors of the *Scientific American*, above all other men, ought to inform themselves of the truth of such statements before giving place to them. If they have actually analyzed samples of comb honey, and found them as above, we want the full particulars of the matter, no matter what it costs to hunt them up. It seems it is not the daily papers alone that are searching for something sensational. I know it is quite a temptation to repeat such things as are sure to create a sensation, when it is so much easier to do it than to hunt up established facts.

THE NEWSPAPER AS AN EDUCATOR (?) ON MANUFACTURED HONEY.

Editor GLEANINGS:—Can you not propose some plan of management by which I can obtain new

comb for starters in sections? I have on hand plenty of thin foundation for that purpose, but many consumers object to its use, even if they are unable to detect its presence in the comb. Lately I have been at some pains to introduce the subject of manufactured honey in conversation, and I find that many of our most intelligent citizens firmly believe that a large proportion of the comb honey sold in our market never saw the interior of a beehive. So much for the newspaper as an "educator."

Bees in this region have made only a living, up to this date—nothing more. There is not yet enough white clover growing here for us to get any surplus from that source. A short period of fine weather three weeks ago brought out some swarms; but cold rainy days followed, and I have had to feed. Basswood gives promise of a good yield, judging from the loads of buds. Z. T. HAWK.

Denison, Iowa, June 25, 1885.

Friend H., you can obtain new comb for starters by putting thin foundation in brood-frames, and hanging them in the center of the brood-nest until the bees get their cells drawn out. Mr. W. B. House gave the plan at length two or three years ago, and he obtained an enormous yield of comb honey, which he thinks was mainly secured by this plan.

NOTES AND QUERIES.

A REPORT RELATIVE TO FLAT-BOTTOMED FDN.

IHAVE been using flat-bottomed foundation, thin, 14 feet to the pound, in small quantities, about one to two inches deep in sections, and I find when I spread it on bread or cakes (I mean pan-cakes) I can not break up this foundation. I have never used any of yours; but if such is the case, I do not like artificial comb for sections—only a very small piece. G. A. MATHEWS.

Katonah, N. Y.

Bees drop with a thud on the alighting-board.

Bates, Ill., June 19, 1885. I. R. MORRISON.

STRAWBERRIES BY THE BARREL.

Those strawberries in the barrel that you requested me to report about (p. 243) were a complete failure. They froze out entirely. W. S. DORMAN.

Mechanicsville, Ia., July 7, 1885.

UNEXPECTED APPEARANCE OF A BLACK QUEEN IN A NUCLEUS.

In my last I mentioned a nucleus which swarmed out and then returned to the same hive. It was without a queen, and I asked you if you could explain their doing so. You can imagine my surprise, two days after, to find they had got a black queen in with them. Now, how is this to be explained? I will guarantee there were no queen-cells in the hive; and besides, I have no bees except what I have got this spring from Viallon and yourself, and there are no black bees in the immediate neighborhood. If you can, please help a novice by explaining how this came about. J. N. KENDALL.

Ilderton, Can., July, 1885.

[Friend K., I think you are mistaken about the queen being of black blood. She is small and dark because she was raised under unfavorable circumstances; but when you come to see her progeny I think you will say they show the Italian blood. Or she may have been a queen that got into the hive by mistake on her return from her wedding-trip.]

WILD FLAX.

Did you know that wild flax is the best kind of bee-fodder for fall? When I was cutting oats that were full of it, all the bees in the vicinity were on it and would stick to it after it was laid down, and the honey is No. 1.

E. J. HAND.

North Harpersfield, N. Y.

Bees are booming. I never had better prospects for a good season. You can hardly imagine how happy it makes me feel, after having three very poor seasons. One colony gathered 16 lbs. July 15, and 15 lbs. July 16, and have done well ever since, also before.

A. SNYDER.

Clarksville, N. Y., July 20, 1885.

TOADS AND FROGS EATING BEES.

Do toads and frogs kill and eat bees? I notice they gather around the hive at night.

Monroe, N. C., July 16.

W. A. HAMILTON.

[Yes, friend H., toads and frogs do eat bees, as you will see by the A B C book, and that is exactly why they gather around the entrances at nightfall. If you don't take care of them they will keep your colony so weak that it will eventually run out.]

DOOLITTLE'S PLAN OF MAKING ARTIFICIAL COLONIES.

Concerning Doolittle's way of making nuclei, I have to report complete success every time, and I do not see why your correspondent Weckesser made a failure. I have written to friend D., to tell him how well I like the plan.

D. F. SAVAGE.

Casky, Ky., July 6, 1885.

ANOTHER REPORT OF FORMING NUCLEI ON THE DOOLITTLE PLAN.

I have divided one colony of bees on the Doolittle plan. I did not put them in a "mountain cave or in the cellar," but simply in a dark closet, and put in a queen which I received of you the same day that she came to hand, and an old bee-keeper pronounces it now to be a good colony.

Barton, Vermont, July 21, 1885. Mrs. J. J. HILL.

BANANAS.

In GLEANINGS for Dec. 1, 1884, you ask where bananas grow, and will probably get an answer from nearly every progressive bee-man in South Florida. Their blossoms are an admirable curiosity, as well as a prominent resort for the bees; and when not injured by freezing, they blossom and fruit the year round.

D. C. UNDERHILL.

Manatee, Fla.

TWO 3-FRAME NUCLEI INCREASE TO 12 FROM THE LAST OF APRIL UP TO THE 24TH OF JUNE.

I started with two 3-frame nuclei of Italian bees about the last of April; increased to 12 up to the 24th of June; got my start from Hemphill & Goodman, Elsberry, Mo. I am well pleased with results and prospects thus far, which are of the most flattering kind. Messrs. H. & G. got their start of Italians of A. I. Root.

JAS. A. STAFF.

Moscow Mills, Mo.

A PROSPECT OF ANOTHER GOOD REPORT FROM FRIEND MALONE.

This beats any season for honey I ever saw. I've increased from 5 to 25, and have taken 285 lbs. honey, to date; 20 are strong, and working in supers. I have not bought a bee nor queen. I have adopted a plan of my own for increase, and it works well. If this fall should prove to be as good as that of 1882, I shall have a big report to make.

WM. MALONE.

Oakley, Ia., July 18, 1885.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,

EDITOR AND PUBLISHER,

MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, AUG. 1, 1885.

And the barrel of meal wasted not, neither did the crust of oil fail, according to the word of the Lord, which he spake by Elijah.—1. KINGS 17: 16

In another column is an inquiry in regard to the practical working of the Stanley honey-extractor. The machine looks as if it would answer admirably, but we should be glad to hear from somebody who has taken a ton of honey or so with it.

DOOLITTLE'S METHOD OF MAKING ARTIFICIAL SWARMS.

A GREAT many have reported succeeding nicely by this method; and when I permitted the little poem to appear last month, I did not think of reflecting on friend Doolittle. It was a piece of pleasantry, and I thought it was rather funny, even if it was a great part of it ridiculous. Besides, the writer is entitled to a hearing, even if he does indulge in pleasantry, for he has done a "big thing" with bees and honey.

GOODS TO BE EXHIBITED AT FAIRS DURING THE COMING FALL.

For sample hives, extractors, and implements of bee culture in general, that are to be used for exhibition at fairs in a way that will probably advertise our goods, we will make a discount of one-fourth. Of course, this would apply to single samples — not to more than one of the same thing. Your simple statement, that the articles ordered are to be placed on exhibition at your county or other fair, will be all that is needed to receive this special discount.

WHERE TO KEEP VIRGIN QUEENS UNTIL THEY ARE OLD ENOUGH TO LAY.

This question comes up in my reply to friend Doolittle's article in the present number. In another column we make an extract from the *Canadian Bee Journal*, where mention is made of queens being kept confined in their cells until almost if not quite old enough to lay. If enough jelly remains in the cell to keep them the required number of days, and they do not suffer from close confinement, we are coming pretty near to the solution of the difficulty; and it comes, too, in nature's own way.

ABOUT "SENDING FOR A DOCTOR."

In my remarks last month, in the department of Our Neighbors, I did not intend to reflect upon the medical fraternity, for I well know they comprise about the most intelligent and best-posted men in community. The principal point I had in mind was that nature, if let alone, will often right many of our wrongs and ailments, and that sound common sense and reason should guide us in deciding what to do. No doubt many people have been maimed for life because they neglected to send for a doctor,

or were stubborn about it; but for all that, I believe that a great many times we call in the services of a doctor, or, worse still, take upon ourselves the responsibility of taking drugs, or "tinkering" in other ways with these bodies God has given us, when Nature would fix it if she had a fair chance, and were left alone. Of course, babies are seldom able to decide what course of treatment is best.

BE CAREFUL OF YOUR MAILING-CAGES.

ONE of the friends sends us a queen-cage which he received by mail, which should have contained samples of live Carniolan bees; but the cage was made of pine, and the hole was made so near the end of the block that a piece of the pine split out and let every bee loose into the mail-bags. He asks the question, "How many such cases as this would be necessary to again banish bees from the mails?" The point is well made. I would under no circumstances use pine for a queen-cage. It splits altogether too easily. Use basswood or whitewood, and have them made in such a way that breakage is next to impossible. We have no right to risk the loss of this great privilege to bee-keepers, by slovenly made cages.

CARNIOLAN BEES.

OUR thanks are due to several of the friends for sending us samples of the above bees. If they had been sent to me without an explanation saying that they were Carniolans, I should have decided without hesitation that they were our common bees and nothing more. Whatever good qualities they may have, there will be this objection: No one can tell whether they are pure or not, and I do not know any means of telling whether we have got one or the other. Friend Jones spoke of finding common black bees in Italy. I should say judging from the looks only that they had black bees in Carniola.

July 29.—We have to-day received two Carniolan queens from Frank Benton, with an explanation that the queens sent to other parties were ordered before ours were, and I heartily beg pardon for not having had a little more charity, which I so often recommend to others. The workers with our queens are all Italians, but the queens look more like Italian queens than they do like common black queens, though the color is perhaps rather a copper color than yellow. This will afford us at least one slight means of distinguishing the two races. The queens reached us in perfect health, and but one worker-bee was dead in the two cages. This is indeed wonderful. We notice a little improvement by putting a piece of fdn. over the apartment containing the candy. This piece of fdn. is waxed down to the wood so as to make it air-tight, thus preventing evaporation from the candy. Friend Benton stands at the head of the world in this matter of making cages to stand long journeys, and I presume he has had more experience than any other man in the world. Just as soon as eggs can be had from these queens we shall start for untested Carniolans. At present I can not say what the price will be—probably about the same that others charge. Neither can I say how soon we shall be ready to ship them, but we will fill all orders in rotation. Of course, they will be crossed by Italians.

USING A BEE-TENT TO STOP ROBBERING.

LAST Sunday morning was somewhat wet and rainy; but for all the wet, the bees seemed starting off with quite a roar, which I at first thought must

be the remnants of basswood-bloom. Pretty soon, however, I decided the roar was on too high a key; and by the time I saw a few bees hanging about the ventilators of the chaff hives, I concluded it was robbing somewhere. I passed one apiary after another, glancing up the avenues of grapevines (which are now quite bushy, and are about six feet high or more). "Oh, yes! here they are." It was one of the last artificial colonies made, and all about it was a perfect hubbub of activity, while the other 300 or 400 colonies were comparatively still. The apiarist Mr. K., soon got a bee-tent, by my instruction, and placed over the hive. He remarked that it had a hole in the top, but I told him I guessed it would do no harm. The robbers collected in large numbers in the top of the tent. As soon as they found the hole they buzzed out and started homeward rejoicing over their heavy load of ill-gotten gains. The point was, did they take their point to come back and get in at this hole? I told Mr. K. what had been reported in the journal, that a tent was better with such a hole in it, and we found that it worked all right. Of course the great body of bees came back and besieged every hive in that vicinity, but not a bee had sense enough to go to the top of the tent and crawl in that hole out of which the robbers were coming. After they had satisfied themselves that no more plunder was to be had, either by *hook* or *crook*, they one after another went quietly back to their homes; and when I came home from meeting, there stood the tent without a robber-bee inside of it, for they all got out at the hole in the top; and neither was there a robber-bee outside of it, or anywhere about the apiary. All you have to do is to put such a tent over the bees being robbed, and go back about your other work. No bees will buzz their wings off inside of the tent, or die of suffocation.

We have to-day, July 31, 6581 subscribers.

LOOK HERE!

To introduce my strain of pure bright Italians, equal to any in the United States, I will offer for August, tested queens, \$1.00 each; extra fine, selected, \$1.50 each; one-frame nucleus, consisting of one extra selected queen, one frame of brood, ½ lb. bees, for \$2.00. If you want any bees, send me your address on postal and I will send you sample by return mail. Beeswax or honey taken in exchange.

15tdb **THOMAS HORN,**
Box 691, Sherburne, Chen. Co., N. Y.



WARRANT FREE

On dollar queens in August and September. There is not a black or hybrid stock near my apiary. Take notice thereof, and govern yourself accordingly.

15d **J. B. HAINS, Bedford, Cuy. Co., O.**

\$2.50. Cheap! Cheap! Cheap! \$2.50

During August and September I will sell at the following low prices, one untested queen, reared from imported or home-bred Italian queen-mother, 1 lb. pure Italian bees, two Simplicity frames filled with brood and honey, all worker comb, in three-frame nucleus hive, all in good shape, and worth \$4.00 for only \$2.50. This adv. will not appear again, so remember it! Make money orders payable at Sherwood, O.

15d **F. W. MOYER,**
The Bend, Defiance Co., Ohio.

PURE ITALIAN QUEENS. 100 READY EVERY 30 DAYS.

Untested at 75 cents; 10 for \$7.00. Tested queens, \$1.50 each. All bred from a selected imported mother. Cells raised in full colonies.

12-16d **D. G. EDMISTON, ADRIAN, LEN. CO., MICH.**

SECOND-HAND FOOT-POWER SAWS.

We have, subject to our order, three Barnes foot-power buzz saws, which we have taken from parties whose business has enlarged so much that they have no further use for them. They are all nearly new, in good order, having all the latest improvements. We will sell them for one-fourth less than the regular retail price; that is, we will sell a \$40.00 saw for \$30.00.

A. I. ROOT, Medina, O.

12 STRONG HYVS of 16 to 20 L. combs, Italian bees for sale at \$4.00 \$5 per colony. 15d
A. B. WEED, 110 WINDER ST., DETROIT, MICH.

1000 POUNDS OF BEES FOR SALE,
Italians and Hybrids, at 75 cents per pound, safe arrival guaranteed.
R. L. TAYLOR,
LAPEER, LAPEER CO., MICH.

EXCHANGE DEPARTMENT.

Notices will be inserted under this head at one-half our usual rates. All ads. intended for this department must not exceed 5 lines, and you must say you want your ad. in this department, or we will not be responsible for any error.

WANTED.—To exchange Chaff and Simplicity hives, wood brood and wide frames, sections in flat, or set up, at A. I. Root's lowest prices, guaranteed as well made, and as good material, for new extracted clover or basswood honey at 9 cts. per lb. 15d
J. B. McCORMICK, Fredericksburg, Wayne Co., O.

WANTED.—To exchange three-band Italian bees for one dozen Brown Leghorn chickens. 15d
JOHN NORRIS, Manchester, Adams Co., Ohio.

WANTED.—To exchange a new circular saw machine for hive-making, worth \$25.00, for extracted honey. Address 15tdfb
D. S. HALL, So. Cabot, Vt.

WANTED.—If you have any thing you want to exchange for pure Italian bees, send me a description of it. 15d
THOMAS HORN, Sherburne, Chen. Co., N. Y.

WANTED immediately.—To exchange Italian bees for foundation to use in L. brood-frames. 15d
O. H. TOWNSEND, Alamo, Kal. Co., Mich.

Black and Hybrid Queens For Sale.

I have some black queens for sale at 25 cts. each. 15d
IRA D. GRANGER, Madison, Lake Co., Ohio.

I will sell in August, 18 prolific hybrid queens at 25 cts. each, all raised from natural swarming. 15d
W. A. SANDERS, Oak Bower, Hart Co., Ga.

A few extra fine hybrid queens for sale. They are very prolific, and a bargain. Price 40c; or if you return cage, 35c. 15d
E. H. COOK, Andover, Conn.

We have a few black queens; some of them probably mated with Italian drones. Price 25 cts. each. 15d
KELLOGG & SONS, Prairie Center, La Salle Co., Ill.

I have a few hybrid queens producing yellow-banded bees, at 30c each. Very dark untested, but laying queens, and some fair in color, but producing very dark bees, 20c each. 15d
J. S. HOFFMAN,
253 Hepburn St., Williamsport, Pa.

Two hybrid queens for sale at 25 cts. each, and two or three untested Italians at 50 cts. each. None but Italian drones in apiary. 15d
J. T. GODDARD,
Box 482, Muscatine, Iowa.

I have 6 or 8 hybrid queens for sale at 60c each; two have clipped wings, are one year old, and are almost pure Italians. The others are untested, but are laying, and may or may not prove to be purely mated. All are ready now. Safe arrival guaranteed. 15d
GEOR. P. KIME,
Evansburgh, Coshocton Co., Ohio.

Names of responsible parties will be inserted in any of the following departments, at a uniform price of 20 cents each insertion, or \$2.00 per year.

\$1.00 Queens.

Names inserted in this department the first time without charge. After, 20c each insertion, or \$2.00 per year.

Those whose names appear below agree to furnish Italian queens for \$1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen be reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delay as may be unavoidable.

Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with *, use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for \$1.00 before July 1st, or after Nov. If wanted sooner, or later, see rates in price list.

*A. I. Root, Medina, Ohio.

*H. H. Brown, Light Street, Columbia Co., Pa. 13td

*Paul L. Viallon, Bayou Goula, La. 13td

*S. F. Newman, Norwalk, Huron Co., O. 13td

*Wm. Ballantine, Sago, Musk. Co., O. 13td

*D. G. Edmiston, Adrian, Len. Co., Mich. 13td

*S. G. Wood, Birmingham, Jeff. Co., Ala. 13td

*S. C. Perry, Portland, Ionia Co., Mich. 13td

Jas. O. Facey, Tavistock, Ont., Can. 13td

*H. J. Hancock, Siloam Springs, Benton Co., Ark. 13td

*E. T. Lewis, Toledo, Lucas Co., O. 3-1

*C. C. Vaughn, Columbia, Maury Co., Tenn. 15-19

D. A. McCord, Oxford, Butler Co., O. 5-15

S. H. Hutchinson & Son, Claremont, Surry Co., Va. 5-3

*E. Kretschmer, Coburg, Mont. Co., Iowa. 11td

*W. A. Compton, Lynnville, Giles Co., Tenn. 11td

*J. L. Hyde, Pomfret Landing, Wind. Co., Ct. 13td

D. McKenzie, Camp Parapet, Jeff. Parish, La. 13td

*J. J. Martin, N. Manchester, Wabash Co., Ind. 7-19

D. A. Pike, Smithsburg, Wash. Co., Md. 7-17

Cornelius Bros., LaFayetteville, Dutch. Co., N. Y. 7-19

Peter Brickey, Lawrenceburgh, Anderson Co., 11td Ky.

S. M. Darrah, Chenoa, McLean Co., Ill. 11-17

Ira D. Alderman, Taylor's Bridge, Saump. Co., N.C. 13td

J. W. Winder, Carrollton, New Orleans, La. 13td

*J. W. Kester, Bloomington, McLean Co., Ill. 11-21

*H. H. Townsend, Alamo, Kal. Co., Mich. 13td

*Elias Cole, Ashley, Delaware Co., O. 13-17

*Haines Bros., Moons, Fayette Co., O. 13-23

H. C. Simpson, Richburg, Chester Co., S. C. 13-15

C. M. Hicks, Fairview, Washington Co., Md. 13-15

G. F. Smith, Bald Mount, Lack a Co., Pa. 15td

U. E. Cottrell, Burdick, Porter Co., Ind. 13td

Jos. Byrne, Baton Rouge, Lock Box 5, East Baton Rouge Par., La. 15td

S. P. Roddy, Mechanicstown, Fred. Co., Md. 15-19d

*Calvin Bryant, Palestine, And. Co., Tex. 15-21

*Moses Brechbiel, Newburg, Cumb. Co., Pa. 15

N. A. Knapp, Rochester, Lorain Co., O. 15

*J. B. Hains, Bedford, Cuyahoga Co., O. 15-19

*Geo. W. & S. H. Folmer, Independence, Kenton Co., Ky. 15d

Hive Manufacturers.

Who agree to make such hives, and at the prices named, as those described on our circular.

A. I. Root, Medina, Ohio.

P. L. Viallon, Bayou Goula, Iberville Par., La. 13td

C. W. Costellow, Waterboro, York Co., Me. 21-19

Kennedy & Leathy, Higginville, Laf. Co., Mo. 15

E. T. Lewis, Toledo, Lucas Co., Ohio. 3-1

H. F. Moeller, cor. 5th st. and Western Ave., Davenport, Ia. 3-1

E. Kretschmer, Coburg, Montgomery Co., Ia. 11td

C. P. Bish, Petrolia, Butler Co., Pa. 15-1

Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they want to dispose of, we will insert notices free of charge, as below. We do this because there is hardly value enough to these queens to pay for buying them up and keeping them in stock, and yet it is oftentimes quite an accommodation to those who can not afford higher priced ones.

I have 5 Italian hybrid queens at 30 cents each.
N. A. KNAPP, Rochester Depot, Lorain Co., O.

Hybrid queens from Sunny-Eden apiary, 50c. each. Safe arrival guaranteed.

W. S. DORMAN, Mechanicsville, Cedar Co., Ia.

Good hybrid queens, 50 cts. each, from August first to November first. Safe arrival guaranteed.
MOSES BRECHBIEL, Newburg, Cumb. Co., Pa.

A few black queens for sale at 25 cts. each. Safe delivery guaranteed, or money refunded.

L. C. CALVERT, Poplar Flat, Lewis Co., Ky.

Hybrid queens, 50 cts. each; black queens, 25 cts. each, from Aug. 1 to Oct. 1. Safe arrival guaranteed.
G. D. RAUBENBUSH, Reading, Berks Co., Pa.

One black queen, one year old, 15c. Four hybrid queens, six weeks old, 30c. each. Nice yellow untested Italian queens, just commenced to lay, 60c. each. J. H. JOHNSON, Middaghs, Northam. Co., Pa.

One-half dozen hybrid queens for sale. Will be shipped in the *Safe* introducing cage, for 50 cents each. All young and prolific.
S. A. DYKE & Co., Pomeroy, Ohio.

I have one dozen black queens at 25c., and 4 hybrid at 50c. The mother of the hybrids is one that I bought of A. I. Root last month—one of his best imported Italian queens.

R. B. BONEAR, Cherry Ridge, Pa.

I am raising hybrid queens from my best honey-gatherers, and will sell them at 50 cts. each. I consider them better than my Italians, except in docility.
E. C. EAGLEFIELD, 100-119, Poy Sippi, Waushara Co., Wis.

Having some 12 or 15 hybrid queens on hand, I will send them to any one, one or more for 50 cts. per piece. They are daughters of imported Italian queens, reared in May and June, this year. Sent by mail in Peet cages. Postage-stamps accepted.
JOHN A. THORNTON, Lima, Ill.

I shall throw out several dark and small (but prolific) Italians, and a number of hybrid queens, in getting away with the hybrids in this locality, and shall sort them according to their merits, at 15, 25, 35, and 45 cents apiece.
C. WECKESSER, Marshallville, Wayne Co., O.

I have six black and twenty hybrid queens. Blacks, this year's queens, each, 25c., last year's 20c.; hybrids, this year's 50c., last year's 40c. I will take $\frac{1}{4}$ less for the lot, if taken at one time, and provisioned cages are sent.

J. A. BUCKLEW, Clarks, Cosh. Co., O.

I have two fine young hybrid queens reared from a pure Italian mother. They are very prolific, and their progeny not very cross. Have they any value at all to you? I hate to kill them. I will sell them to you or any one else at your own price.
S. H. HICKOK, Bethel, Conn.

AFTER AUGUST 1ST, I WILL SELL

Bees as follows: 2-frame nuclei, \$2.00; 3-frame, \$2.40; full colony in Root's Simplicity hive, \$6.50. Each of above to contain 1st's queen, \$1.00 queen, 75c.; tested, \$1.25. Some fine Poland-China pigs, very cheap. Address N. A. KNAPP, ROCHESTER, LORAIN CO., O.

20 COLONIES ITALIAN BEES AT \$4.50 EACH.
15-18d M. ISBELL, Norwich, N. Y.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column.

DADANT'S FOUNDATION

is asserted by hundreds of practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sag, most regular in color, evenest, and neatest, of any that is made.

It is kept for sale by Messrs. A. H. Newman, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; Dougherty & McKee, Indianapolis, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Ezra Baer, Dixon, Lee Co., Ill.; E. S. Armstrong, Jerseyville, Ill.; H. Drum, Adelphi, O.; Arthur Todd, Germantown, Philadelphia, Pa.; E. Kretschmer, Coburg, Iowa; E. F. Smith, Smyrna, N. Y.; C. T. Dale, Mortonville, Ky.; Clark Johnson & Son, Covington, Ky.; King, Aspinwall & Co., 16 Thomas St., New York City; C. A. Graves, Birmingham, O.; M. J. Dickason, Hiawatha, Kan.; J. W. Porter, Charlottesville, Albemarle Co., Va.; E. R. Newcomb, Pleasant Valley, Dutchess Co., N. Y., and numerous other dealers.

Write for samples free, and price list of supplies, accompanied with 150 Complimentary and unsolicited testimonials, from as many bee-keepers, in 1885. We guarantee every inch of our foundation equal to sample in every respect.

CHAS. DADANT & SON,
36tfid Hamilton, Hancock Co., Illinois.

QUEENS. If you are in a hurry for them, give me an order. Fifty laying now, 90c. each; 6 for \$5.00. Tested, \$1.50. Fine stock. Can be sent by return mail in my improved Peet cage.
33tfidb L. HEINE, BELLMORE, QUEENS CO., N. Y.

F. HOLTKE & CO., OFFER
3-FRAME NUCLEI WITH \$1.00 QUEEN
FOR ONLY \$2.00!

This offer is good for July and August only. Each purchaser is entitled to 1 doz. of Peter Henderson's choice selected Hyacinths and Tulips—all to be shipped in light boxes. Send money in Registered letter. Satisfaction guaranteed.

F. HOLTKE & CO.,
14-15 16d Carlstadt, Bergen Co., N. J.

QUEENS NOW READY.
DARK LEATHER-COLORED*—
—*OR LIGHT ITALIANS.

TESTED, \$2.00; UNTESTED, \$1.00 EACH, OR 6 FOR \$5.00.

Address all orders to

E. PETERMAN, WALDO, WISCONSIN.
13tfidb

Italian Bees in Langstroth Hives.

\$9.00 PER COLONY; 3 FOR \$25.00.

Safe arrival guaranteed. Will give satisfaction. Correspondence solicited.

JOHN M. RAGLAND,
13tfidb 418 Broadway, Denver, Colorado.

FOR SALE. A 4-horse-power boiler, B. W. Payne & Sons' make. Has been in use about one year. It is as good as new for service. Has crack in base which has been riveted. Will sell boiler complete with pump and heater for \$300.00.
13tfidb LEE CROSBY, Columbus, Warren Co., Pa.

I HAVE A NICE LOT OF
Untested Italian Queens

Reared from cells cut from swarming colonies. One, \$1.00; 6 or more, each, 75 cents.

W. H. PROCTOR.
Fairhaven, Vt.

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FOR SALE.

21 Colonies of Pure Italian Bees in Langstroth frames, straight pretty combs, with honey, in DOUBLE-WALL OBSERVATORY HIVES; Been used two seasons with one-pound boxes, and for extracting. Complete on board cars, for \$8.00 per colony, or \$14.00 for the lot.

JAMES CRAIG,

16 E. 18d

MT. MERIDIAN, VA.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column.

CARNIOLAN QUEENS.

After August 15, I think, I shall be able to send queens by return mail. They are daughters of an imported queen, but fertilized in my apiary of 60 colonies of Italians. My Carniolan bees are easily distinguished from native bees by their appearance alone, and they are quieter and much less inclined to sting than the gentlest bees of any other race I have seen. Sample Carniolan bees, free, postpaid. Carniolan queens, safe arrival guaranteed by mail, one dollar each.

16ftdb

JAMES H. MORRISON,

OXFORD, CHESTER CO., PA.

W. J. ELLISON,
STATEBURG, SUMTER CO., S. C.

Has a lot of fine Italian queens raised from splendid stock, that he will sell at \$1.00 each; \$9.00 per dozen, or \$65.00 per hundred. Safe arrival guaranteed. 16 E 1d

NUCLEUS.—I have 50 two-frame nuclei, strong in bees, with fine Italian queen. I will sell for \$2.50 each. By adding frames of brood or empty comb these nuclei can be built up to strong colonies for winter.

16d

T. S. SANFORD,

Box 584,

Bradford, Pa.

TO CLOSE OUT.

I will sell 12 chaff hives, made up and painted, at \$1.09 each. Also three colonies Italian bees at \$3.00 per colony. W. K. LEWIS, DRY RIDGE, KY. 16d

Queen-Rearing.

How to rear queens by the best and simplest methods. For particulars address

16ftdb

HENRY ALLEY, WENHAM, MASS.

30 STRONG COLONIES OF

Italian Bees For Sale at \$5 Each.

Ten frames, combs all built on wired foundation, and filled with honey and brood. Hives all well painted. Queens raised from imported stock. Will ship during August and September.

16-17d

A. F. PROPER, Portland, Jay Co., Ind.

JOB LOT OF WIRE CLOTH

AT GREATLY REDUCED PRICES.

SECOND QUALITY WIRE CLOTH AT 1½ CTS. PER SQUARE FT.

SOME OF THE USES TO WHICH THIS WIRE CLOTH CAN BE APPLIED.

This wire cloth is second quality. It will answer nicely for covering doors and windows, to keep out flies, for covering bee-hives and cages for shipping bees, making sieves for sifting seeds, etc.

Number of Square Feet contained in each Roll Respectively.

Inches Wide.	No. of Rolls.	Number of Square Feet contained in each Roll Respectively.
10	3 3/4 rolls of 15, 2 1/2 S. 1.	7140
12	2 2/3 rolls, 100 S. 1. each	
20	3 3/4 rolls of 166 S. 1. each	
22	4 3/4 rolls of 181, 1 of 189 S. 1.	
24	6 1/4 rolls of 300, 1 of 180, and 1 of 120 S. 1.	
36	1 23/4 rolls of 217, 28 of 216, 2 of 135, 1 of 156, 1 of 152, 2 of 213, 1 of 210 S. 1.	
38	16 1/4 rolls of 252, and 2 of 254 S. 1.	
34	7 1/2 rolls of 281 S. 1.	
36		
38	7 1/2 rolls of 276, 3 of 285, 2 of 371, 1 each of 190, 622, 1, 8, 156, and 215 S. 1.	
42	1 1/4 roll of 245 S. 1.	
44	1 1/4 roll of 306, 1 of 318 S. 1.	
46	1 1/4 roll of 155 S. 1.	
48	1 1/4 roll of 160, 1 of 200 S. 1.	

FIRST QUALITY WIRE CLOTH AT 1½ CTS. PER SQUARE FT.

The following is first quality, and is worth 1½ cts. per square foot. It can be used for any purpose for which wire cloth is ordinarily used; and even at 1½ cts. per sq. ft. it is far below the prices usually charged at hardware and furnishing stores, as you will ascertain by making inquiry. We were able to secure this very low price by buying a quantity of over one thousand dollars' worth.

Inches Wide.	No. of Rolls.	Number of Square Feet contained in each Roll Respectively.
10	3 3/4 rolls of 15, 2 1/2 S. 1.	7140
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A. I. ROOT, Medina, Ohio.

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Write for samples free, and price list of supplies, accompanied with 150 Complimentary and unsolicited testimonials, from as many bee-keepers, in 1885. We guarantee every inch of our foundation equal to sample in every respect.

CHAS. DADANT & SON,
Hamilton, Hancock Co., Illinois.

I Will Sell Full Swarms of Pure Italians

In the Langstroth Simplicity 10-Frame hive. For a single swarm, \$6.00; two more, \$5.00 each; five or more, \$4.50 each. Safe arrival guaranteed.

Address

M. R. NICHOLS,

15ftdb

Weaver's Corners, Huron Co., O.

HONEY COLUMN.

CITY MARKETS.

KANSAS CITY.—*Honey.*—Trade in this article very quiet just now, mostly extracted in bulk and our small glasses and tins, moving at this time of the year. We have made some large sales of extracted honey this week. Southern, 50¢c; clover and sage, 60¢c. Comb honey nominal at 12@13¢ for choice 2-lb. sections; 13@14¢ for 1-lb. *Beeswar.* weak, 20@25¢.

CLEMONS, CLOON & CO.,

Cor. Fourth & Walnut Sts., Kansas City, Mo.

Aug. 6, 1885.

ST. LOUIS.—*Honey.*—The warm weather continues to depress our honey market. Extracted in barrels, Southern, old, 36@37¢c; new, 40@41¢c, nominal. In cans, retail, Northern white clover, 9@10¢. Comb honey, old, not salable; very little new in market. We look for an improvement in a few weeks. *Beeswar.*, 22@23¢.

W. T. ANDERSON & CO.,

104 N. Third St., St. Louis, Mo.

Aug. 10, 1885.

CHICAGO.—*Honey.*—The new crop is coming in to a fair degree, and the demand is about equal to the receipts. It brings 15¢ per lb. for 1-lb. sections; little else coming. Extracted honey, 5@7¢c; demand better. *Beeswar.*, 22¢.

R. A. BURNETT,

161 So. Water St., Chicago, Ill.

Aug. 11, 1885.

CLEVELAND.—*Honey.*—New honey has made its appearance, and is selling in 1-lb. sections at 15@16¢. Old honey stands still, there being no demand for it; still, we are willing to sell it at 11@12¢. *Beeswar.*, 22¢.

A. C. KENDEL,

115 Ontario St., Cleveland, O.

Aug. 12, 1885.

CINCINNATI.—*Honey.*—No change whatever since my last. Market dull for all kinds, with large arrivals. *Beeswar.*, no change; arrivals and demand fair. It brings 20@22¢ on arrival.

CHAS. F. MUTH,

S. E. Cor. Freeman and Central Avenues,
Cincinnati, O.

Aug. 11, 1885.

DETROIT.—*Honey.*—The honey market is still very dull. One-pound sections are selling at 10@12¢.

Aug. 12, 1885.

A. B. WEED,

407 Woodward Ave., Detroit, Mich.

HONEY AND BEESWAX.

We are now in the market, and will be during the entire season, for all honey offered us, in any quantity, shape, or condition, just so it is pure. We will sell on commission, charging 5 per cent; or if a sample is sent us, we will make the best cash offer the general market will afford. We will handle beeswax the same way, and can furnish bee-men in quantities, crude or refined, at lowest market prices. Our junior member in this department, Mr. Jerome Twichell, has full charge, which insures prompt and careful attention in all its details.

Sample of comb honey must be a full case, representing a fair average of the lot. On such sample we will make prompt returns, whether we buy or not.

CLEMONS, CLOON & CO.,

15-2db Kansas City, Mo.

MUTH'S

HONEY-EXTRACTOR,

SQUARE GLASS HONEY-JARS.

TIN BUCKETS, BEE-HIVES,
HONEY-SECTIONS, &c., &c.

Apply to CHAS. F. MUTH, CINCINNATI, O.

P. S.—Send 10-cent stamp for "Practical Hints to Bee-Keepers." 15fdb

Wanted. Situation in California

By a young married man, who wants to try California before locating; has had 15 years' experience with bees, has 250 stands; is a carpenter and builder, will work at any thing during winter; would like to come in December. How much am I offered? 16d F. J. FARR, Buckner, Mo.

HUTCHINSON'S

ADVERTISEMENT.

We are now making a specialty of rearing fine Italian queens. All queens are bred from the purest and best of mothers, and the cells built in full colonies. We have one of A. I. Root's very best, selected, tested, imported queens, also quite a number of very superior home-bred queens from the apiary of "Cyula Linswik." Besides this we have our own original stock which was built up from Dadant imported stock and from queens obtained from several of our best breeders. We are not trying to see how cheaply we can rear queens, but how good ones we can furnish. No queens will be sent out that would not be used in the home apiary. Single queen, \$1.00; six for \$5.00; twelve or more, 75 cts. each. Tested queens, \$2.00 each. Full colonies, \$5.00 each. Make money orders payable at Flint. Address

W. Z. HUTCHINSON,

Rogersville, Genesee Co., Mich.

15fdb

ORDERS ALL FILLED.

We have a fine lot of queens now ready to ship. We claim to have the brightest yellow Italian bees in America. T. S. HALL, Kirby's Creek, Ala. 16-17d

Wanted.

A competent man to conduct an apiary, also a poultry rancho. Address with reference,

L. A. FITZPATRICK,

16-19db Hyde Park, Phillips Co., Ark.

DADANT'S FOUNDATION FACTORY. Wholesale and retail. See advertisement in another column. 3btfid

EXCHANGE DEPARTMENT.

Notices will be inserted under this head at one-half our usual rates. All ads intended for this department must not exceed 5 lines, and you must say you want your ad in this department, or we will not be responsible for any error.

WANTED.—Comb and extracted honey, and wax, in exchange for Italian bees, queens, foundation, or fdn. machinery. Also two foot-power-saw mandrels with 5 and 6 in. saws. See circular, and state particulars.

16d OLIVER FOSTER, Mt. Vernon, Linn Co., Iowa.

WANTED.—To exchange bees in L. hive for thoroughbred poultry.

16-17d B. J. PURCELL, Concord, Ky.

WANTED.—In exchange for new varieties of strawberries and raspberries, Plymouth Rocks, Light Brahmas, Pekin Ducks, new varieties of potatoes, and small-fruit plants, cherry and quince trees.

P. SUTTON, Exeter, Luz. Co., Pa. 16-23db

WANTED.—To exchange Zimmerman Fruit-Evaporator, and 100-egg incubator, both new, for good section and extracted honey. Will give you a bargain now.

16d KANAWHA-VALLEY APIARY, St. Albans, W. Va.

WANTED.—To exchange a new circular-saw machine for hive-making, worth \$25.00, for extracted honey. Address

15fdb D. S. HALL, So. Cabot, Vt.

WANTED.—To exchange salt mackerel on 10-lb. pails, for good extracted honey.

16d E. E. LING, 11 Silver St., Portland, Maine.

WANTED.—To exchange Italian bees for beeswax: 20 lbs. wax for a colony.

16fdb M. ISBELL, Norwich, N. Y.

WANTED.—To exchange a 50-inch Standard Columbia bicycle, in good order, for honey (comb honey preferred); will take part money to suit the purchaser. Correspondence solicited.

F. E. EDWARDS, Bellows Falls,
Box 520. Windham Co., Vermont.

WANTED.—To exchange for Italian queens or cash, late spring Plymouth-Rock Cockerels. Warranted. Prices, single, \$1.50; pair, \$2.00.

J. B. MARSH, Collinsville, Ala.



Vol. XIII.

AUG. 15, 1885.

No. 16.

TERMS: \$1.00 PER ANNUM, IN ADVANCE.
2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00;
10 or more, 75 cts. each. Single Number,
10 cts. Additions to clubs may be made
at club rates. Above are all to be sent
to ONE POSTOFFICE.

Established in 1873.

PUBLISHED SEMI-MONTHLY BY

A. I. ROOT, MEDINA, OHIO.

Clubs to different postoffices, NOT LESS
than 30 cts. each. Sent postpaid, in the
U. S. and Canada. To all other coun-
tries of the Universal Postal Union, 18c
per year extra. To all countries NOT of
the U. P. U., 42c per year extra.

A WORD TO THOSE WHO EXPECT TO BUY BEES IN THE SPRING.

WHICH IS BETTER, TO BUY NUCLEI NOW AND BUILD
THEM UP, OR PURCHASE FULL COLONIES
IN APRIL?

THE above question was propounded by a customer who called to see us yesterday. He wants to begin with bees, and has not very much capital. Now, let us see. A full colony in April, according to our price list, and, I think, according to the price list of most reliable dealers, will cost about twice what it would after the first of July. You see the price of a colony of bees runs down rapidly after the honey season is over, when no more honey is to be gathered, or, at least, not much prospect of any. Then the wintering trouble has to be faced, so that bees, just before the honey season, early in the spring, ought to be worth at least double what they are in the fall. It is true, some advertisers offer them less, but they do not often furnish full colonies. When we send out a full colony in April we take the best we have in the apiary; and if we haven't any that can be consistently called a good strong colony, we take hatching brood from one or more of the others. If we do this, of course we must have a good price. But such a colony is worth a good price, for it can be divided at once, or made to give a good crop of honey or many swarms, because it is strong even before the season opens. Our friend thought he ought to have about six colonies to begin with. Six colonies as above, with select tested queens would be worth \$156; with the discounts \$117.00 in April, 1886.

He could not afford so much money, so he, by my advice, bought six pounds of bees, with a comb of brood and a select tested queen for each pound. These cost him \$27.54, therefore he would have \$89.46 to buy sugar, and to pay him for his labor in feeding them and building them up to full colonies in time for winter. As he has plenty of time, and is anxious to learn bee culture, his experience in building them up will be worth a good deal to him, to get them ready for next season's work. Of course, he has the wintering trouble to face; but even if he loses them, the amount invested is not very large after all; and if he takes right hold of it, and does his duty, I think there can be little question but that they will winter. As he is in a locality where there is little chance for fall honey, his built-up colonies will have stores of granulated sugar; and if put in chaff hives, I think there is little doubt but that they will winter safely—at least, reports from colonies built up in this way have always been favorable. As our friend knows comparatively little about bees, I told him that he had better get some experienced bee-man near him to take a look at his nuclei occasionally, to see if they are building up as they ought to do. He chose select tested queens, because we have tested these for prolificness, and any one of them would fill a hive with brood very speedily.

Of course, he must have six hives for his bees, and he also wants some combs of foundation. This will make somewhat of an additional expense. He might have saved a little expense by taking untested queens instead of select tested, and I think I would, as a general thing, advise the untested. The

expense of making the experiment is then comparatively trifling. If he succeeds in building his nuclei up to good strong colonies, and winters them, he will probably make a profitable investment of it next year. If he is not calculated for a bee-man he will probably lose them all during the winter, and become disgusted with the business, without being very much out of pocket. The question is, Will a pound of bees, and a frame of brood and a queen, started, say, in the middle of August, build up so as to make what may be called a fair colony by the middle of November? We could do it easily here; but whether the average novice would succeed in doing it, is another question. I advised him to use the Simplicity feeder, because this will hold all a pound of bees will need at a time, and the expense is trifling.

Very likely many of you can buy cheaper than at the prices I have given. In fact, nuclei are advertised in this number, cheaper than we sell them; and if you wish to purchase, I would advise you by all means to buy of somebody near your home, to save the expense of express charges. If you can go and get them with a horse and spring wagon, all the better. I do not know of any work I ever enjoyed more than building up nuclei in the fall into full colonies, in this way. I would keep up the feeding until the weather gets too cold for the bees to take it from the Simplicity feeder; and then if they have not an abundance of stores to go into winter, I would commence feeding again in the spring, as soon as it is warm enough for them to go back to the feeder again. As the weather becomes cool, I would cover the brood-nest, all except a little opening right over the cluster, and I would set the Simplicity feeder right beside this opening. If this opening is small, say half an inch in diameter, it will do no harm if left open all winter. Such openings had better always be left, unless the covering to the bees is some coarse material, such as burlap or sacking.

I should very much like to hear reports from those who undertake this matter of building up nuclei, so that we may determine for future seasons how late it will be safe to attempt it. Of course, much depends on the laying powers of the queen, and the way in which the bees go to work to help her. The pound of bees ought to be young ones.

MRS. CHADDOCK'S LETTER.

She Tells Us how to Make Beeswax out of Doors.

ALSO SOMETHING ABOUT A BEE-MAN WHO MAKES MONEY.

LAST Monday I spent a pleasant hour with Mr. Rufus Porter, of Lewistown, Ill., and his most estimable wife. Mr. Porter has been for many years a successful bee-keeper; but he is not doing anything with them now, his son having the entire control of them. Mr. P. has about 75 colonies at present, in Langstroth hives, and he runs them altogether for extracted honey. He ships all his honey, and pays no attention to his

home market; he winters successfully, and he knows how to render beeswax. He told me how his bees were prepared for winter. In September, or early in October, he takes off the honey-apartment, and places a few corn-cobs, or a little frame made on purpose, over the brood-nest, and then he puts on a frame made to fit the top of the hive and to go inside the cap, with a piece of coarse coffee-sack nailed across the bottom of it. This frame is filled with wheat chaff thrown loosely in, and not packed down at all. His bees face to the south, have no shade over them, and he lets them severely alone. After he had said a good many other things, he said, "Now I want you to take something back. I'll tell you how I extract beeswax, and I want you to promise to try my way."

"Oh!" said I, "you have a wax-extractor."

"Well, yes," said he; "I have one; I paid six dollars for it, but I do not use it. I have a big iron kettle sitting away back in the yard on some stones, and when I have some wax to render out I build a fire under the kettle, fill it nearly full of water, and after it comes to a boil I dump in part of the old combs; and as the wax rises to the top I dip it off and pour it through a sieve, made of mosquito netting, nailed to a frame—this frame, or sieve, being placed over an old tub, or half a salt-barrel will do, with cold water in it. When I have dipped off all the wax that rises from what I first put in, I put in another batch, and dip off again, not letting the water boil, but just keeping it boiling hot. After I am through with melting I take the wax out of the cold water and heat it so that it will run, and make it into any shape that I want it. Now I want you," said he, "to try my way, and report on it. You can burn the half-barrel and the sieve when you get through, and there will not be many things to clean up. Now, will you try this way?"

I said, "May be."

In 1871 Mr. Porter made \$1200, *clear money*, from one hundred colonies of bees (spring count, I believe). But this is no sign that others can do it. Mr. Porter being one of those who have the touch of Midas (was it Midas? If not, it was somebody else, who turned every thing he touched into gold). Any way, he knows how to get money out of every thing that he undertakes. He was engaged for a number of years in the small-fruit business, and he made money at that. Now he is running a drain-tile factory, and all of you who live on low land know that there is money in drain tile.

MAHALA B. CHADDOCK.

Vermont, Ill., Aug., 1885.

Mrs. C., friend Porter's plan might please some of the friends, under some circumstances; but it seems to me as if it would be also wasteful. He had better buy a sort of press to squeeze the wax out of the residue; and it seems to me that, in burning up the barrel and sieve, that is rather wasteful too, because a good deal of wax will be adhering to them, unless you clean it off with boiling water or steam. We do not like to waste even a barrel on our premises. It has one merit, however—it gets unsightly things out of sight, unless you should call the old kettle unsightly; but I suppose that might be kept back of the barn or hog-pen. You know I think it is a grand thing to keep the front yard looking tidy, even if you can not have all the premises so.

FALSE STATEMENTS IN REGARD TO THE HONEY BUSINESS OF OUR COUNTRY.

As a protection to our bee-keeping population, we propose in this department to publish the names of newspapers that persist in publishing false statements in regard to the purity of honey which we as bee-keepers put on the market.

WE are pleased to notice some kind words from the *Prairie Farmer*, in regard to the way in which bee-keepers have been wronged by newspaper stories about the adulteration of honey. It is pleasant to know that at least one of our agricultural papers feels like helping to right so great a wrong.

One of our correspondents sends us the following clipping from the *Anaheim, Cal., Gazette* of July 18:

The Massachusetts State Board of Health, from recent investigation, finds that there is very little pure honey in the State. That sold in little glass jars is not honey at all, but simply glucose, with just a little of the honeycomb put in.

The above has been going the rounds for some little time, and we should like to have the matter investigated. In the first place, what is the Massachusetts State Board of Health? Can any of our friends who live in the above State tell us about it? Next, is it true that the honey offered for sale in the provision stores of Massachusetts is, very little of it, pure honey? Will the bee-keepers of that State please look into the matter? It seems to me it is a gross misrepresentation. If it is indeed true, that Massachusetts is flooded with spurious honey, then the bee-keepers of the State, assisted by the bee-keepers of other States, if need be, should look to it that good pure honey be offered at a reasonable price by all who make it their business to deal in honey. We shall be very glad indeed of help to get more facts in the matter. Each State in the Union has a duty to perform in this matter. Who will help to remove this stigma from the bee-keepers of Massachusetts?

BEES AND FRUIT.

I inclose you a new remedy for killing bees when troublesome to fruit, which you will please insert in *GLEANINGS*, for the amusement of our bee-keeping friends. It is taken from our local paper, and is the funniest thing relating to bees which I have ever read. Oh how it made me laugh when I read it! I want to add, that "many fruit-growers" don't adopt the "ingenious and efficacious" plan, or else what a glorious time the bees would have!

The irrepressible conflict between the fruit-grower and the bee-keeper is again to the fore. Though grapes are not ripe, the bees are busily at work harvesting them, to the annoyance and loss of the vineyardists; and unless the owners of the depredated bees corral them, we are requested to give warning that the bees will be warred upon.

The ingenious and efficacious way of killing bees which many fruit-growers here adopt is to attract the bees to vessels of honey on which common flour has been sprinkled. This flour adheres to the feet of the bees, and is thus carried to the hive, where it ferments and asphyxiates the inmates.

—*Anaheim Gazette*, July 18, 1885.

Now, I want to ask a question. Suppose bees take a load of some liquid or fruit-juice that has been poisoned with strychnine or arsenic, will it kill them before they are able to store it in the hives, or can

they carry it in and store it in sufficient quantities to hurt human beings, if eaten?

1—ALFRED W. HIND, 16—21.

Anaheim, Cal., July 29, 1885.

Friend H., no doubt the extract you send us will provoke a smile from many bee-keepers, and yet there is something sad about it to me, to think that we must have difficulty and disagreement.—Bees will usually die before they get to the hive, when poisoned with Paris green or other arsenical preparations; but I should think it quite probable that, when the distance is short, they might carry enough into the hives to make the honey dangerous for people to eat.

A BEE-CONVENTION IN SYRIA.

AN INTERESTING LETTER FROM FRANK BENTON, IN REGARD TO APICULTURE IN PALESTINE.

WE had a bee-convention in Syria; or, rather, we've been having a series of them here recently. This may seem rather surprising news to people of the Western World, who suppose Syria is beyond the pale of civilization. But though the country is in many respects behind Europe and America, modern methods in bee culture have now taken permanent root here. The gatherings have been quite informal in their nature, as close application of parliamentary rules in the conduct of such meetings is not the way of the country; moreover, of the seven or eight different languages represented by the members of the convention, four had to be employed in the talks on bees; namely, English, French, German, and Arabic. Perhaps some of the friends in other countries, who find with but one official language in their conventions it is still difficult to get on harmoniously, will wonder what we could do with such a Babel of tongues. Nevertheless we got on quite well, and the interchange of ideas will no doubt prove of great value to many of the participants. At one of the meetings a president was unanimously elected, but he hasn't yet called anybody to order. Probably the most important work done by the convention was the adoption of a standard frame for Syria, to be known as "the Syrian Standard Reversible Frame." All bee-keepers in countries where several sizes of frames have come into use will comprehend at once the wisdom of such a step while movable-comb bee-keeping is yet in its infancy in these parts. The frame adopted measures 14 $\frac{1}{2}$ inches (= 365 mm.) in length, and 8 $\frac{1}{4}$ inches (= 213 mm.) in depth. All members of the convention, which included two Americans, one Frenchman, one German, one Italian, and a number of Syrians, follow American methods altogether in their apiaries, if we except one, a Syrian peasant who has but one frame hive as yet, and for the present retains native hives—long cylinders made of clay or of wicker-work, and also earthen water-jars, into both sorts of which the bees are put after the receptacle has been laid on its side.

Among other topics which were discussed at our meetings, migratory bee-keeping (already largely practiced here) and hives adapted to it received much attention; also in connection with this the various bee-ranges of the country were discussed. Orange-blossoms furnish the chief spring harvest, though almond, apricot, and other fruit-blossoms,

are of importance. Cactus-plants supplement these; in fact, in many localities they form the chief early honey-yield. The late harvest comes in midsummer from wild thyme, which is abundant in most of the hilly and mountainous portions of the country. Of course, there are also many minor sources,—wild flowers, etc. It was agreed, that where orange, cactus, and thyme blossoms were abundant, with the usual minor yields, nothing would be gained by transporting bees to other pastures.

The wintering problem didn't get much attention, since there is no difficulty on that score here; nor did we devote very much time to a discussion of the relative merits of the different races of bees, as none but Syrians are kept in Syria. The writer, however, and a member formerly in his employ in Cyprus, testified to the superiority of the Cyprians over the Syrians. No other members had had any experience with Cyprians.

Altogether, a bee-convention in Syria may be considered an interesting and important event — interesting to the outside world as showing the progress already made, and that America has been taken as the model; important to the country itself, both because it is likely to spread greater interest in an industry which can be made to contribute much more than heretofore to the welfare of Syria, and because the proceedings are likely to induce a more systematic development of the industry in the East.

The convention adjourned to a photographer's, and the migratory shadows were committed to paper. As far as means will permit, copies of the same will be sent to the bee-journals.

Friend Root, of GLEANINGS, will surely take kindly to our President, who appears in the center of the group with his hand resting on the A B C book. French bee-keepers will not be ashamed of their countryman, Mr. Philip Baldensperger, whose large honey-yields in Palestine have attracted attention, but which have unfortunately been attributed to German methods and even to German bee-keepers, by parties who knew better.* Messrs. Dennler & Zwilling, of Alsace-Lorraine, will recognize in his hand a copy of their journal. It so happens that this disciple of American bee culture is flanked by Americans; for your humble servant, to whom the penning of these chronicles seems by common consent to have been left, stands at his other hand. The little block of wood with three holes in it, and the reversible frame with no attachments or projecting corners, will be recognized by some, any way. A man of Italian origin stands at my left. He has never owned any bees, but was in my employ some time; in fact, I might say he has been my *left-hand man* for two or three years past. Still further to the left, a Syrian schoolmaster, owner of ten hives, holds in his hand a copy of the *British Bee Journal*; yet though he knows English and French, he is not a subscriber to nor a reader of any bee-journal, nor has he ever owned or read a book on bees. Perhaps this Syrian friend prefers the *name* and not the *thing*. In front of him is a Syrian merchant — a former landlord of mine. The good-looking full-bearded man who stands at the left in the picture represents the sturdy German race, and says he is "strongly interested in bees." Next to him is a peasant friend with his daughter. The lat-

ter, who holds an earthen jar such as the peasants employ as hives, has had much to do with recent work in bee culture here; for on a tray placed on her head she has brought down from distant villages of Mt. Lebanon, in twos, many of the stocks of bees that have furnished the queens for customers in far-off Europe and America. The juveniles are represented by two rising bee-keepers, one of whom has evidently adopted the smoker, while the other has "sat down" on the native cylinder hive.

Our eyes are turned toward America for light in bee-keeping matters; and if the world hears of large reports from these shores of the Mediterranean, the credit of them will, it is to be hoped, go where it belongs.

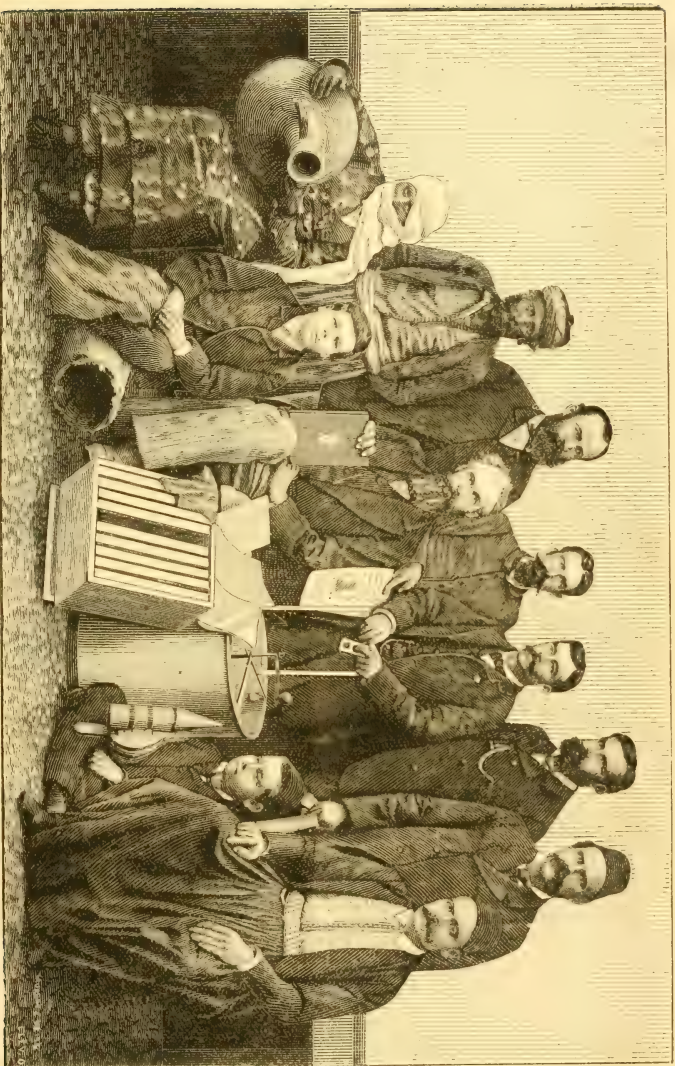
FRANK BENTON.

Mt. Lebanon Apiary,

Beyrout, Syria, May, 1885.

Friend Benton, we are exceedingly obliged to you for your picture, and the very graphic description you have given of it. We are very glad indeed to be able to look upon the countenances of our far-away friends and comrades: and with what alacrity would we extend the hand of fellowship, had we the opportunity of mixing in with your little group! Please tender them all our kindest wishes, and tell them that it will afford us the utmost pleasure to assist them in any way in getting the "hang" of modern bee culture, as it is now practiced here in America. But, look 'e here, old friend, I do not know whether we had better claim to be in advance of you away off there in Syria or not, while you hold that reversible frame in your hand—that frame "without any corners or projections," as you express it. You know I said in an editorial a year or more ago, that the thought of such a frame kept haunting me. When I was half asleep at night, some phantom would hold it out to me, and I would jump and grasp for it; but when I got it, and began to think it over, I could not discover any practical way of using it, without hitching something on to the corners, like our reversing wires for instance. I suppose you mean that the frame that you hold belongs in that hive in front of you, where we see the vacant place. Now, will you be so kind as to tell us what holds it in place after you put it in? What keeps it from pushing over against its neighbors, or from mashing bees against the end of the hive, and at the same time gives a lateral movement endwise and sidewise, that we have almost all decided we must have, from good old father Langstroth down? If you have something that you can work with in that way, please out with it, and don't keep us in suspense.—Are you not a little severe on our friends Howard and Alley? I have not looked up the reference, but I feel quite sure that our good friend Howard, who made us a call about a year ago, did not mean to misrepresent in any way. It is true, that the Palestine queens that he brought us have not turned out very well, for we have only one of them left, and that one produces such small cross bees, and not extra honey-gatherers either, that we do not dare offer for sale any queens reared from her; but for all that, I am sure that friend Howard supposed he was doing us a favor when he brought us the queens.

* See Howard's and Alley's reports in GLEANINGS and the A. B. J.; also see editorial notes in the *Bienen-Zuechter* of Alsace-Lorraine.—F. B.



OUR FRIEND FRANK BENTON AND HIS FELLOW-KEEPING COMRADES IN BEYROUT, SYRIA.
A Free-Keepers' Convention with the Representatives of eight different languages present.

WINTERING WITH STORES ALWAYS ABOVE THE CLUSTER.

Report from Bee-Friends who keep from 400 to 500 Colonies in Six different Apiaries.

IN TWO CHAPTERS.

NOW that the fruit-trees are in full blossom, we think we can make our report and give our true standing in regard to loss of bees for the winter and spring. We went into winter quarters with 465 colonies of bees. To-day we count up 324, and we don't think we shall lose any more. This has been a very hard winter, and everybody's pet theory has been put to the test. For our part we have no pet theory further than this: When we lose a colony of bees we try to find out why they died. We have not lost a colony but that, on opening up the hive, the reason of the loss is plain enough to be seen. And just here I would say, we don't go a cent on the pollen theory or sugar stores either. We never take away any pollen, and have never fed a pound of sugar to our bees, but still we have been moderately successful with our bees; and even this very hard winter we are still 38 colonies ahead of last year, and all were wintered on their summer stands.

We keep our bees in six places—one yard at home, and the other five apiaries from four to nine miles away. We hire help during the extracting season only. All board at our house, and go with teams to the different yards, and extract one yard a day, and there is no one to look after the bees when we are away.

We raise but very little comb honey, and that at the home yard; we keep our queens all clipped.

But, why did we lose so many bees? Well, there are several direct and indirect causes. In the first place, I will say that all that died during the winter, starved—starved with plenty of honey in the hive; but the very cold weather prevented them from getting it. They ate their way up to the top of the frames. It was too cold to move to where they could get honey. Then they had the dysentery, and died. What gave them the dysentery? Perhaps it was pollen. But, why did they eat the pollen? Because they got out of honey. Now, I take the ground that, if they had honey directly over the cluster, they would have been all right; they would not eat pollen enough to hurt them. At any rate, we have not had one case of dysentery nor lost a colony of bees that had honey over the cluster—not a comb soiled, bees strong and healthy; on the other hand, when the bees ate all the honey over the cluster, clear up the top, they all had the dysentery; and what did not die right out dwindled badly—some deserted this spring.

We claim that the kind of hive used has a great deal to do with wintering bees successfully. We have been using three different frames and hives; but what we like best is a quadruple hive, double-walled, two inches of chaff all around, holding four colonies of bees, all under one roof. Each division of the hive is $13\frac{1}{2} \times 13\frac{1}{2} \times 21$ inches high, inside measure. We use 9 frames, which stand on the bottom; that gives us depth of frame; and if these nine frames are filled three-fourths full of good honey, the bees will commence the winter under the honey, and eat upward toward the top. The honey is all the time directly over the cluster. The bees work upward as they eat the honey, and it takes a long cold winter to get to the top; and unless they

do eat up to the top, they won't have dysentery, and they will stand a good deal of cold weather. We have some Langstroth hives, and a few Simplicity L. hives which we made last winter, so that, with what we had before, we have now enough quadruple L. hives to hold 104 colonies two stories high, using eight frames in each story. They are double walled with chaff filling. The chamber, or roof, covers the upper stories. The upper stories are movable. We can set them off the lower stories, each one by itself; this makes a good hive, safe to winter in. It has depth, as we leave the upper stories on full of good sealed honey. We have used a few of them now for three years with good success.

We have one quadruple L. hive that has been in use three years, and has never lost a colony in these three past hard winters, and no dysentery either. They had all the pollen they gathered, but I have always been particular that they had the upper stories filled with honey. Standing by the side of it is one of my tall quadruple hives (frames 21 in. high, nine frames), in which, three years ago, we put an imported Italian queen that we got of C. Daut. She is alive yet, and has a good strong colony. I have drawn two brood-frames from it this spring. This hive has not lost a colony in the three past years. We have been very careful that the hive had all four colonies in good trim in the fall, plenty of bees, and frames well filled with honey, because our imported queen was there.

Platteville, Grant Co., Wis., May 25, 1885.

CHAPTER II., WRITTEN THREE MONTHS AFTER.

We handle bees differently, perhaps, from any one else, but we get the honey—not quite as much this year as last, but we have 28,000 lbs., all extracted. Our best day we took out 2960 lbs.—2075 lbs. of it with one extractor. There were 12 days when we took out from 1000 to 1500 lbs. with one machine.

E. FRANCE & SON.

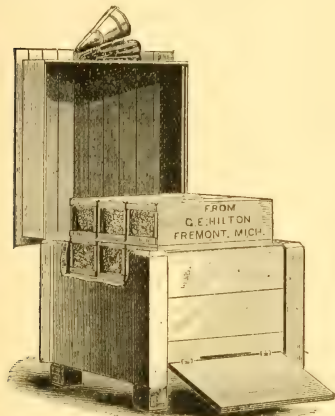
Friend F., I have no doubt that the tenement-hive idea, or, if you choose, having four colonies in one hive, placed so close together that they receive the benefit of the animal heat from each other, will be a safer arrangement for severe winters than we can possibly secure by having each colony in a separate hive. A great many who have tried tenement hives—ourselves among the number—decided that we could not stand the complication resulting, and the difficulty of manipulation. Some of the advocates of tenement hives say they would as soon handle bees in that way as in any other, but I can not agree with them. It seems to me that a better way still would be to have eight colonies in a single hive—four above, and four below, with entrances so the bees could go out when the weather permits. Eight colonies put closely together in this way, with a very thin board separating the clusters, would have a wonderful power in resisting the encroachments of frost. But then, there is the difficulty of handling the lower combs. After all such experiments, I have decided that I want each colony or nucleus in a separate hive, and that hive at least seven feet from any other. I am ready to change my mind, however, if any plan offers that will help us out of the difficulties I have mentioned.—I am very glad to receive such a report as you make in your second chapter. Wisconsin seems to be destined to keep up her reputation this season as well as last.

FRIEND HILTON'S BEE-HIVE.

A CHAFF HIVE WITH A HINGED CAP.

AT the State Convention last winter you told me if I would furnish the cuts you would be pleased to give an illustration and description of my hive.

The open hive shows two sets of crates filled with $1\frac{1}{2}$ -pound sections, giving surplus room for 90 lbs. The closed hive simply shows the general appearance.



GEORGE E. HILTON'S CHAFF HIVE.

The outside is made of $\frac{3}{4}$ lumber, two feet long, the ends nailed on the sides, making outside dimensions about 24x25 inches. This leaves the side walls 6 in. thick, and end walls 4, to the top of brood-nest. There it is decked over flat, allowing the whole upper part to be used for surplus for extracting. I use a super holding 14 frames; and for comb honey a crate similar to the Heddon, only it holds forty 1-pound sections, or thirty $1\frac{1}{2}$ -lb. sections, and can be tiered up, and the cover will shut over all, leaving an air-space all around.



EXTERIOR VIEW OF HILTON CHAFF HIVE.

During the present hot weather I raise the covers

an inch or two, which gives a circulation and permits the bees to remain in the cases. I have in my yard at this time some colonies with 80 sections nearly complete; and when they swarm, oh my! what swarms!

For wintering, when I remove the surplus in the fall I place on a Hill device, spread over a piece of burlap two feet square, and press in a cushion that just fills the upper part to where the cover comes off. This is hinged at the back, and rests on two brackets, and makes two shelves—one at the top where the smoker now stands, and one inside. The alighting-board, which is also hinged, rests on the sand or sawdust in front.

For the past five years my winter losses have averaged about 10 per cent, and my bees were never so strong as the past spring.

G. E. HILTON.

Fremont, Mich., July 25, 1885.

SOME VALUABLE SUGGESTIONS
FROM J. A. STAGG.

HOW TO CLEAN A SMOKER.

BORE a $\frac{3}{4}$ -inch hole in the bottom of the smoker, so that the front edge of the hole will be under the back edge of the small bent tube. Now cut a circular piece of tin about the size of a half-dollar, and fasten it over the hole by driving a tack through one edge. If the tack is driven through the edge opposite the small staple which holds the wire spring on, the L of the spring will aid in holding the tin lid in place. Now slide your lid to one side, and you can get at the tube without trouble. Why not make the smokers so, friend Root?

RED-CLOVER HONEY.

My bees, Italians, are storing considerable red-clover honey at present. "How do you know it is red-clover honey?" Because the clover-fields near the apiary are full of Italian bees; and because the honey being stored has the unmistakable red-clover flavor.

A QUEEN'S FREAK.

Last summer while attempting to introduce a young Italian queen, she took wing and "skipped out." The next day a neighbor living about a quarter of a mile distant was examining one of his colonies, which contained a choice tested queen. Upon lifting a frame he discovered two queens—one his tested queen, the other a fine young laying Italian. A careful examination failed to disclose any traces of queen-cells. I saw this young queen, and, from peculiar markings on her body, did not hesitate to pronounce her the identical queen which had escaped from me the day before.

CIGAR-BOX FEEDER.

Take a cigar-box and put in a partition $\frac{1}{2}$ inch from the front side. The partition should extend to within $\frac{3}{4}$ inch of the top. With a sharp bit and a chisel or knife, cut out that part of the bottom between the partition and front. Next cut out a square in the lid, say $2\frac{1}{2} \times 2\frac{1}{2}$ inches, and tack a piece of wire cloth over it, allowing the wire cloth to sag considerably. Now pour in a little melted wax and run it around the corners by holding the box in different positions. This will prevent any leaking. Put in a few clean shavings or cut straw to prevent the bees from drowning, and your feeder is ready for use. Cut a slit $\frac{1}{2} \times 4$ inches in the cloth over your bees; set the feeder so that the

opening cut in it will be directly over the slit, and pour in your feed. In cool weather, cover with several thicknesses of cloth or old carpet, so as to keep in the heat. This is decidedly the best cheap feeder that I have ever tried—no robbers, no drowned bees, no stings, no expense.

Greensburg, Ind., July 29, 1885. J. A. STAGG.

Friend S., we have thought of making smokers in the way you describe, but it makes them more complicated, and there will always be a chance for air getting out under that tin slide. We try to have our bellows so tight that, when the blast-tube is closed by the finger, the bellows can not be closed, even with considerable pressure; and every bellows should be thus tight to work effectively. — Where a young queen gets away under the circumstances you mention, she is liable to go wherever it happens, or where she hears bees humming. As a rule, though, they come back to the place from which they took wing.—Your feeder is substantially the one figured in Mr. Langstroth's book. You say, in enumerating its good qualities, "No expense." Were you to make fifty or a hundred, I think you would find that they do cost something, after all.

THE BRANCHVILLE CASE OF POISON HONEY.

SOME ADDITIONAL FACTS IN REGARD TO THE MATTER.

WE take the following from the Branchville *Banner* of July 23:

Editors Branchville *Banner*:—The July number of *Gleanings in Bee Culture* contains an article on the subject of the recent cases of poisoning from honey, with which your readers are familiar. There is also a letter from Prof. A. J. Cook, of the Michigan Agricultural College, who asserts that the poisoning could not have resulted from the presence of *Gelsemium* in the honey, or, if present, the drug must have been maliciously placed there.

Without being an expert in matters concerning bees and honey, the writer believes that the cases referred to in GLEANINGS, in the letter of Mr. and Mrs. Dukes, were the result of poisoning by *Gelsemium* contained in the honey, and begs to submit the following reasons for that belief. The whole question is certainly worthy of close investigation.

1. The symptoms produced by the toxic action of *Gelsemium sempervirens* are:

Diaphoresis; muscular relaxation; dizziness, and dimness of vision; dilatation of pupils; reduced pulsation; retarded respiration; absence of stupor or delirium.—*U. S. Dispensatory*.

Every one of these symptoms was present in all the cases above described.

2. Pavv says: "The honey, again, of certain countries and districts is well known to possess certain special qualities, dependent on the flora of the locality. * * * Hence also the deleterious qualities which the honey of Trebizonde, upon the Black Sea, has long been known to possess, and which are due to its collection from a species of rhododendron, the *Azalia pontica*, which grows upon the neighboring mountains."—*Food and Dietetics*.

Every one knows how the odor, the taste, and coloring matter of flowers are frequently imparted to honey. What ground is there, then, for asserting that the toxic principle of flowers can not be also conveyed to the honey?

3. That the flowers of the yellow jessamine are very poisonous, is well known in the South. One instance will suffice. Some two months since, Mrs. Clark, a Northern lady, staying in Orangeburg (18 miles from this point) gathered a large bouquet of yellow-jessamine flowers, and thoughtlessly chewed the blossoms, while walking. An hour afterward she exhibited every symptom described above, and recovered after several hours, vomiting very freely.

4. On the coast of South Carolina, and on the Sea Islands, where the jessamine grows in rank luxuriance, the poisonous qualities of honey (especially wild honey) are known to everybody. No planter or colored person dares to eat wild honey there. During the war many of the Federal soldiers, who ate freely of this honey, found out its deadly effects to their cost, although no deaths are known to have followed from this cause.

5. The honey which caused the Branchville poisoning was obtained by Mrs. Jacob Dukes from her father, who lives near the edge of a swamp where jessamine grows in great abundance, and where, during the present late spring, no other flowers, or very few, were accessible to the bees.

In the case of Mrs. Dukes, her son, and the colored children, we see the effect of a poison which is traced clearly and indisputably to the honey. This poison in its action produced every symptom of *gelsemium* poisoning, to the minutest particular. The bees did make the spring honey chiefly from the yellow-jessamine flowers; and the supposition that any one mixed any drug with this honey in the comb, is out of the question, to any one knowing the parties. Is not this very strong evidence as to the active agent producing the sickness and deaths above recorded? The strength of these facts can not, at all events, be shaken by a simple assertion or opinion from any source whatever. A. T. P.

Friend A. T. P., our thanks are due to you for calling our attention to the fact that so good an authority as the U. S. Dispensary describes so plainly the poison from *gelsemium*. As you state it, I should say there was no mistake. We have almost positive evidence in regard to the source of the honey; and hereafter when these symptoms follow after eating honey, we may be pretty sure it is owing to the presence of yellow jessamine in the vicinity. It may be, that honey made from this plant is not always equally poisonous; but in any case, where it is known to grow extensively people should be careful about eating freshly gathered uncapped honey. It would be quite a valuable point now to ascertain whether this honey remains poisonous after being thoroughly ripened and capped over by the bees.

AFTER-SWARMS; CAN THEY BE PREVENTED?

DOOLITTLE'S IMPROVEMENTS IN THE PLANS ALREADY IN USE.

WHATEVER may be said regarding the prevention of increase where an apiary is run for extracted honey, one thing is certain: That an apiary so worked as to obtain the best results in comb honey must of necessity give more or less natural swarms. I believe with many others, that just one natural swarm from each old colony in the spring will give better returns in comb honey than it is possible to get by any other mode of management; while if more than one swarm are allowed from any one colony, with such an after-swarm goes at least a half of what might be obtained as surplus; hence it becomes very desirable to prevent all after-swarms. For this reason the subject has been written about and talked upon for the past quarter of a century, and many plans of prevention given, the most of which have proven to be a failure when put in practice.

Among the plans given, two methods have stood, and are the most prominent; the first of which is the cutting of queen-cells, and the second the moving of hives from the old stand to a new. As I wish

to say a few words regarding each I will speak of the cell plan first.

CUTTING OUT ALL THE QUEEN-CELLS EXCEPT ONE.

We are told if we open the hive at any time during the first five or six days after the swarm has been cast, and cut off all the queen-cells except one, no after-swarms will be the result. If the bees desire more queen-cells they have plenty of brood yet sufficiently young from which to rear more queens. In nine cases out of ten such cells are formed, and the cell which was left is destroyed, or the young queen killed as soon as she hatches. This results in after-swarms fourteen to eighteen days after the first one issued.

Now for my improvement on this plan, which I have used without a failure for over ten years. It is very simple. Just listen a moment in the evening, at the side of a hive which cast a fine swarm eight days previous, and if the swarm issued upon the sealing of the first queen-cell (which as a rule most swarms do; there are exceptions, we all know), the young queen will be hatched, and her peeping will tell you an after-swarm may be expected the next day. Early the next morning open the hive and proceed to shake the bees from every frame in front of the entrance so they can run in, and so you can easily see every queen-cell, so as not to miss any. Now cut off every one, and you are sure of the thing. No "hope so" or "guessing" about it.

"But," says a friend, "Bro. Heddon tells us, on page 415 of GLEANINGS for June 15th, that 'if we are going to produce cheap honey at a profit we must manipulate hives more and frames less,' while the plan you give is one for the manipulation of frames."

"Have you tried Bro. Heddon's plan, as given on page 415?" I ask.

"No," says he; "have you?"

"Yes, I tried it last year, which was the poorest honey season I ever knew, and it worked in every instance, so I recommended it to Bro. Burns, of Thorn Hill, and to Bro. Nesbit. Well, this year fifteen out of every twenty so tried have cast after-swarms, while Bro. Burns says every one of those he tried has swarmed again, and Bro. N. has fared little if any better. Hence the Heddon plan goes as an entire failure in this locality, and I am blamed for recommending it. If we are to go through all the manipulation of hives, only to come to the manipulation of frames at the end of the lifting and lugging of hives, I beg to be allowed to manipulate frames without going through with the former; for the two operations can not help produce cheap honey. But, stay a moment, friend, for I have learned something from these experiments, which may be of help to the bee-keeping fraternity. It is this: Have a box or hive with the desired number of frames (I use frames of comb) in it, and when a prime swarm issues take the box to the hive from which the swarm came, setting the frames out of the box near the hive. Now open the hive and take out the frames of brood, putting them in the box. If the combs of brood seem to still be well covered with bees, and the weather is warm, shake a part of them off in front of the hive, before putting the combs in the box. If few bees or cool weather, put all in the box, setting the box in the shade, and a rod or so from the hive, as soon as all the frames of brood and the bees on them are in it. Now put the frames brought from the shop into the hive, and

re-arrange it, by which time the swarm will return if the queen has a clipped wing. If not, they are to be put back in this hive. Next put the combs of brood in a hive where you wish a colony to stand, and the next morning give a queen-cell, which will hatch in 12 to 24 hours, or give a virgin queen, which will be accepted if done at this time. In this way I secure all the advantages Bro. H. does by his plan, and make the prevention of after-swarms a perfect success."

Borodino, N. Y.

G. M. DOOLITTLE.

SOME VALUABLE HINTS FROM OUR GOOD FRIEND MRS. JENNIE CULP.

"GATHER UP THE FRAGMENTS THAT NOTHING MAY BE LOST," ETC.

FRIEND ROOT:—GLEANINGS for July 15th is received and contents noted, and I find (as is often the case) some articles which make me feel just as sister Chaddock says your foot-notes make her feel, and I have concluded to let forbearance cease to be a virtue, and "answer back." I can truly sympathize with her concerning foot-notes, and extracts published from private letters, for it makes my head swim now when I think of the "answering back" I am compelled to do on account of them.

Article II.—In your "Apology to our Ohio Brethren" you ignore the sisters, as though you did not owe them an apology too. Perhaps you are not aware that a sister nominated you for the presidency, and that the sisters helped elect you without a dissenting voice. We the "sisters" are perfectly willing the "lords of creation" shall hold the lines; but we feel it is our privilege to occasionally step out and tell you the way you *ought* to go.

Art. III.—A little plain talk with sister Chaddock. Allow me to say, sister C., before commencing, that I have no wax-extractor to sell, neither am I employed to puff them or any other labor-saving machine. Your article on how you made beeswax was the cause of my losing nearly a whole night's sleep. It was not the hard (unnecessary) work you had done that worried me, as much as it was your determination not to be enlightened on the subject, and vow to burn, hereafter, all the fragments of comb and wax that come in your possession. The command in Holy Writ is, "Gather up the fragments that nothing be lost," and this can be done most effectually in the bee-business. Washings of cappings and honey-vessels will keep the family supplied with delicious vinegar; the old broken bits of comb-trimmings, and scrapings of hives and honey-boxes, with the use of one of A. I. Root's wax-extractors (I wouldn't be bothered with one of his 35-cent ones), will transform it into beautiful wax, with scarcely any more attention than you would give a kettle of potatoes boiling for dinner, and no muss either. I know what I say to be true, for I have used one for four years, and could not be persuaded to do without one, if I owned only half a dozen colonies of bees. The proceeds from my little apiary, in the form of wax, have netted me in the three years I have had charge of it, \$30.00. The fragments are worth saving, dear sister; but I must acknowledge to you the wax-extractor had to be thrust upon me by a kind and loving husband, who would not consent to my musing with it in the oven, burning fingers, and occasionally spilling wax on the floor or carpet, and you know it is not like

the old woman's grease—it won't rub off when it gets dry. Your article caused me to review 24 years of happy married life, and I saw, as I never saw before, how very kind my husband had been in thrusting upon me so many labor-saving machines, and how loth I was to accept them on account of the expense (for we were poor), and yet every one of them has proved to be a benediction to me. How slow—oh how slow! some of us are to see the point as to what is best for us!

A word about the bees, and then I will try to stop. The fruit-bloom yield of honey was pretty good, enabling the bees to bridge over to basswood (no white-clover honey, as the old crop of clover was frozen out); basswood of short duration. We are not expecting any surplus this fall, unless we get it from buckwheat. I am going to be satisfied with past blessings in the honey line.

Oh, yes! I am not done yet. A word to sister Nellie—I am going to wait and see what the elder sister bee-keepers say on the Sunday bee-keeping question; and if they do not answer you to suit me, I will tell you a "real rooster story" that helped me wonderfully on that line.

Hilliard, O., July 29, 1885. MRS. JENNIE CULP.

My good friend, I am very glad that I have succeeded in making you feel as if you wanted to answer back. So it was the sisters who thought I would do for president, was it? May God give me strength and wisdom, that they may not be disappointed—By all means give us the rooster story, Mrs. C. Why, I can imagine one thousand or more juveniles clapping their hands. Just think of it, little friends! Mrs. C. is going to give us a real rooster story, and it is something about Sunday-schools too, I am pretty sure; but she must send it right along for next juvenile, and not wait for any of the elder sisters.

SOME SUGGESTIONS AND CORRECTIONS FROM C. C. MILLER.

CAN ADULT BEES SECRETE WAX?

I DON'T know; but I can hardly see that it is proven on p. 536, as you, Mr. Root, seem to agree. I see nothing in the facts stated, to show that any wax was *secreted*, only *worked* by the old bees. Of course, you must have noticed that, as a general rule, no freshly secreted wax is used in making queen-cells. I think in all the thousands of queen-cells that have come under my observation I never saw a light-colored one unless the surrounding comb or combs were light.

BEES USING OLD WAX OVER AGAIN.

Indeed, I think bees use old wax over again much more than most bee-keepers suppose. The elder Mr. Oatman once said to me that they thought seriously of melting up their old combs and giving the colonies fresh foundation, just because, with old comb in the hive, they could not secure sections of the purest whiteness. When I used wide frames I practiced putting a brood-frame between two wide frames, with no intervening separators; and whenever they were allowed to remain thus till the sections were sealed over, or partly so, the capping was sure to be more or less dark. Sometimes the capping was uniformly dark, sometimes mottled with bits of white and dark, about half and half, but easily distinguishable; but in no case do I rec-

ollect a section of virgin whiteness sealed under such conditions. In this case they must have carried the old wax from one frame to another. Perhaps if we want the whitest sections it will pay us to remove the superfluous wax from top-bars and elsewhere. I think I get whiter sections by using Heddon's honey-board, perhaps because the bees don't like to carry the old wax so far.

A SUN WAX-EXTRACTOR.

Don't be alarmed—nothing patented, complicated, nor even original, only to show how easily it can be done. As I run altogether for comb honey I don't get much wax; but small quantities are always accumulating or wasting; and with no better convenience than the sieve and pan it has been more or less a nuisance. For some time I have been noticing the advertisements, to know what kind of wax-extractor to buy; but the trouble with all was, that fire heat must be employed, and I wanted something that would take care of itself, by my merely throwing in the scraps. So the other day I gave Charlie instructions to make one. He took a box 2 ft. long, 2 ft. wide, 1½ ft. deep (I don't think the size essential, but he happened to find one of that size), put a shelf in it on which was placed an old black sheet-iron dripping-pan. One corner of the pan was split open, and the pan (or, rather, the shelf) very slightly slanted, so that, as the wax melted, it would slowly run out of the open corner, and under this corner was placed a stone crock holding one or two gallons, and nearly filled with water. The box was made bee-tight, and covered by a window-sash that had been lying idle in the cellar; and as the sash was too large for the box, boards were nailed on two sides of the sash, to make it fit. That's all there is of it—an old box, dripping-pan, window-sash, and stone crock. Not an ornamental thing, by any means, but it does nice work. All that is needed is to throw the scraps into the pan, and the pure wax drops into the crock, leaving the sediment on the bottom of the pan. It runs only in the middle of the day; but Charlie hastened it very much one day by putting a looking-glass so as to reflect the sun upon it. I don't know that it would do for large quantities, but I have got three or four pounds of very nice wax from it.

GETTING WAX FROM OLD COMBS.

One would almost infer from Mr. Swinson's experiments on page 533, and your comments thereon, that a frame of comb after being in use ten years had absolutely less wax in it than when first made. I doubt this. I don't think the wax evaporates; and after the first cocoon is left in it, the bees can not get at the wax to take it away, except at the edges of the cells. I think less wax is usually obtained from old comb than from new; but the wax may be there for all that. Suppose you try this experiment: Take an old black comb; cut or break it in two; and when tolerably warm, mash up the one piece into a solid ball, and, leaving the other piece whole, place the two where they can have the full benefit of the hot sun for some days, or give them a slow fire heat. The piece left whole, if the heat has been strong enough and long enough, will be found scarcely any thing but dry cocoons, easily pulled apart; whereas the other will still be a solid ball with much wax in it, and I doubt if you can get it out. Burn each in the fire, and see the difference.

C. C. MILLER, 179—340.

Marengo, McHenry Co., Ill., Aug., 1885.

Thanks, friend Miller, for your correction.

I agree with you in what you say; for I have observed the same many times. In fact, I have seen pieces of new dark comb as large as my hand, because they were built between two old black combs. I am glad you have suggested this caution in regard to getting our comb honey capped with white cappings. Your suggestion, that we get whiter comb honey by using the Heddon honey-board, is new to me. I have been struck with the remarkable whiteness of a large lot of comb honey just purchased. It was secured by the Heddon system.—Thanks for your report in regard to the sun wax-extractor. In getting wax out of old black combs, don't you think a wax-press described in the ABC would get it out pretty nearly?

OLE FOGY NOT DEAD YET.

HIS OPINION ON CLIPPING QUEENS, ETC.

BRO. ROOT:—I quote from page 529, Vol. 13 of GLEANINGS: "Friend S., in regard to bees always alighting, that sentence caps the climax in helping us to decide that you are greatly given to notions. Have you forgotten the perfect hailstorm of facts rained upon the head of poor Ole Fogy a year or two ago, and the way in which we made him come out of his cover and own up and take back his words?"

Now turn to page 741, Vol. 11, and read Ole Fogy's last article that he ever wrote on that subject, and your own inevitable foot-note thereto, and I fancy somebody else will have to "own up and take back." That hailstorm of facts you speak of was a very small matter, only a mist that nobody feared. Oh, no! I still hold the fort, and expect to hold it till there's a stronger battery opened against it than ever has been yet. I took the position, that a natural swarm issuing *for the first time from a hive, in a normal condition*, never, never, never goes off without first settling or clustering, *providing always that there is a decent place convenient for them to settle on*. I'm on that platform yet, and will stand on it till it falls; and I am happy to know that the number is growing beautifully smaller and smaller every year, of those superstitious people who think they must be on hand when their bees swarm, to make all the noise and confusion they possibly can with horns and bells, tin pans, and even looking-glasses and shot-guns, to keep their bees from going to the woods "mit out settlin'." Others, again, just as unreasonable, but ashamed, perhaps, to be making such a racket for their neighbors to hear, quietly go to work and cut off the queen's wing so she can not fly; and don't you know that, if you have your queen's wings cropped you have got to watch them closer than if they were not cropped at all—I mean in swarming time? I want no cropped queens in mine; do you hear?

OLE FOGY.

Allendale, Ills., Aug. 5, 1885.

Friend F., it seems as if there were a couple of us who have been careless or forgetful. While you have Vol. 11 in hand and open, reading p. 741, just turn two leaves more and read page 745; also notice below, the "foot note."—In regard to the editorial you refer to, please notice that friend Salisbury says, "*Bees always alight*." He doesn't specify first or second swarms, or name any condition, as you do.

MY EXPERIENCE WITH THE BEE-POISON.

BY REV. L. L. LANGSTROTH.

IN 1838 I put two colonies of bees in an attic closet, but I made no experiments of any kind with them; they were simply looked at and admired. In 1839 I fairly began my apiarian career, and soon found that to experiment much with bees, meant to get many stings. At first these were not only quite painful, but caused severe swellings. I dreaded to be stung the latter part of the week, for often one eye would close and the other nearly so, and to preach in such a condition was by no means a pleasure. If stung on the hand, my whole arm would swell so rapidly that if my coat was not seasonably taken off, it had to be ripped off. In short, I was a regular martyr to the bee-poison.

My second year's experience was much more favorable, and in the course of a few years I became almost bee-proof. In the pressure of business, and my zeal for studying the habits of the bee, I preferred to be stung occasionally, rather than to lose time by wearing a bee-hat. The pain of a sting was seldom very severe, and not often caused much swelling. My experience was the same with that of most bee-keepers who had persevered in spite of stings, until at last their systems became accustomed to the poison.*

A few facts out of many that might be given: I once agreed to help a farmer to move a hive to a new location. He assured me that the bottom-board was securely fastened. It fell off before we had got more than a few steps with our load—covered with bees, some of which were crushed—and the air at once was filled with the enraged insects. The farmer dropped his side of the hive and ran away; it fell against me, but I held on until I lowered it to the ground; and then made the best of my way into the house. Perhaps a hundred or more stings were pulled out of my face and head! and yet in a few hours one could hardly have noticed that I had been stung at all. When visiting that great man, Dr. Jared P. Kirtland, of Cleveland, Ohio, he wished me to examine with him a colony of bastard (hybrid) bees. The doctor was armed with bee-hat and gloves—both of which I declined to use. We quieted them pretty well with smoke, when he began to discuss some point in bee culture with his usual animation. Soon his gesticulating hand was doing quite a business, the bees became furious, and paid all their respects to me; and how many stings were pulled out of my face and head I can not tell. As soon as this extracting work was over, I said: "Doctor Kirtland, I protest against all eloquence in the vicinity of bee-hives—especially when you are clad in proof armor, and I have none!" Although ever so well stung, the pain was soon over, and in a short time no visible proof remained that a bee had stung me.

In 1874, after the death of my son, my health became so impaired that I sold all my bees. The next spring an entire change seemed to have come over me with respect to the bee-poison. I first noticed it in extracting some stings with the poison-sac attached, for a friend who wished to procure the bee-poison in a perfectly pure state. I had noticed at

*The Austrian who came over with Mr. S. B. Parsons' Italian bees, when stung, would leisurely take out of his pocket a vial to anoint the sting with his favorite remedy! Seeing how indifferent Mr. Cary, myself and others were to stings, he soon ceased to produce the vial.

the beginning of each year's work among my bees, that the poison affected me in various ways, and my wife would often have to awaken me when she heard me unconsciously moaning in my sleep. The night after pulling out these stings, this moaning became so pronounced as to awaken the friends with whom I was staying, and alarm them with the fear that I was dying. Intense dryness of the tongue and fauces, accompanied sometimes by what seemed to be an aggravated form of heart-burn, smarting of the eyes, a heavy, drooping sensation in the eyelids, breaking out of fiery spots over various parts of my body, a disposition to almost tear the flesh of my cheeks, dreaming of the most excited kind, full of violent motion — these and many other symptoms were of frequent recurrence at the beginning of each bee campaign.

After getting the medicinal bee-poison, as before recited, the effect upon me was so severe that I became really alarmed, and earnestly sought to protect myself against any recurrence of such unpleasant symptoms. I soon found this was next to impossible. To converse with those fresh from handling bees — nay, even to receive letters or postal cards from them, was to be poisoned again.[†]

Ten years ago, being at my old home in Greenfield, Mass., I engaged to visit my friend Wm. W. Cary, of Coleraine, one Saturday afternoon, intending to preach to a congregation where for some years I had served as their pastor. The day was a charming one, and I was quite happy at the thought of meeting so many old friends. Mr. Cary had been handling bees all day, and was well charged of course with the bee-poison. Almost as soon as he had shaken hands with me, my eyes began to smart, my eyelids to feel heavy, and my face to itch. My spirits sank at once, and the thought of preaching and seeing my old friends caused me only anxiety; in short, the very bottom of all hopefulness seemed to drop out, as it were, in a few moments. Explaining my reasons, I sought other quarters, but the pleasure of my visit was essentially spoiled. Imagination! I hear some one saying. Does imagination cause burning eruptions on the body, constant roaring in the ears, as though near a waterfall, to say nothing of moaning in sleep, etc.?

From 1875 to 1881 I dreaded the return of each bee-season. My letters were all read by some member of my family, that I might handle none from bee-keepers. I felt that, let my general health be what it might, I could do nothing more with bees. While I could easily trace much of my suffering to the bee-poison, I could not believe that it was the cause of the head trouble from which I have suffered so much, for I was a frequent martyr to this many years before I kept bees. Now, had I given my experience with the bee-poison from 1875 to 1881, I should have left the matter in such a shape as to prejudice many against having any thing to do with bees. I should only have given the actual facts in my case; but for want of other facts not then duly weighed by me, my facts would have seemed to warrant inferences just the opposite from the truth.

In the spring of 1881 my health being more fully restored than for some years, it seemed to me almost an impossibility to keep longer away from the bees. A new thought suddenly occurred to me.

[†]The susceptibility of some persons to the bee-poison, seems to be as great as that of others to the poison-ivy. I can handle this with impunity, while I have friends who can not get near enough to it to see it, without being poisoned by it, if the wind blows to them from it!

Suppose a person after long use of tobacco or opium should give them up for some time — long enough for the effect they produce to pass away — and should then attempt to take the old, big dose! would he not be naturally alarmed at the result? May I not be mistaken, then, in supposing that any great change has taken place in my system, as respects the effects of the bee-poison upon it? and may not my painful experiences of the last six years be accounted for in another way? So long as I kept bees and dealt so largely in queens I was compelled each year to inoculate my system so fully with their poison, that however severe the ordeal at first, I soon became indifferent to it. Now being under no such necessity, I stop short every time of full and repeated doses. Suppose that I take such doses again. With fear and trembling on the part of my family, but with scarcely any on my part, I determined to test the matter, for as even the presence of freshly extracted honey in the house was enough to bring on another attack, I felt that I must get out of the world before I could escape from this dreaded poison. I determined, therefore, to make full proof of my new theory. Without any bee-hat, I helped my friends to extract their honey, all the time saying to the bees, "Sting me as often as you please;" and as they were gentle Italians, I did not scruple by somewhat rough treatment, to make them do much more than they naturally wished to, in the way of stinging. From the very first I did not suffer nearly as much as I had done every year since I ceased to work with bees! and little if any more than I had done every year when first handling them. In about a week I was again bee-proof, and launched out at once into a course of experiments (all in vain) to control if possible the impregnation of queens.

How can I ever describe my delight in handling again the movable frames! In the apiary of a neighbor, Rev. McGregor, I fully proved that with small strips of foundation for guides, I could use my comb-guides, or guide-frames, and secure from Italian bees the same perfect worker-combs that I used to get with these guides from the black bees; thus realizing a favorite idea of one of our greatest bee-keepers (Doolittle), viz., getting perfect worker-combs with the least use of foundation.

While handling frame after frame of such combs, and feeling as much enthusiasm as I did in 1853, when I first saw that the bees would follow the triangular comb-guide, I explained to the Rev. McGregor (apologizing for the seeming play upon his name), I must make those words of Rob Roy in Scott's novel, my own: "My foot is upon my native heath — and my name is McGregor."

Unquestionably some persons are so extremely sensitive to the bee-poison, and so dangerously affected by it, that under no circumstances should they keep bees. To such persons my experience can be of no service.

Oxford, Ohio.

Friend L., the facts you furnish us in the above article are indeed valuable. You may be perhaps aware that others have been affected by the poison of the bee-sting in the same way you mention — among them friend Heddon. Now, is it not probable that a good stinging might so inoculate friend H. that it would set him all right? The remedy might be in some respects a bold one; but if it were my case I think I would risk a

trial of it. If I understood you correctly, it is now your opinion that, had you at any time, while you were thus affected, been stung enough so that your system had become thoroughly inoculated with the poison, these bad symptoms would have disappeared. I am inclined to think that giving way to these feelings has often a good deal to do with it.

BEE BOTANY.

OR, HONEY-PLANTS TO BE NAMED.

HYPTIS EMORGI; A GOOD REPORT FROM THE PROCEEDS OF ONE COLONY.

I SEND you a specimen of a plant. It is a shrub or bush 4 to 10 ft. in height, with 50 to 100 shoots, from the size of your fore-finger to the size of your wrist, making a dense bush from 4 ft. to 10 ft. across the top. It has fine light-green twigs like knitting-needles, and long slim needle-like leaves of a very bright light-green color, which enables you to distinguish it from other shrubs at a great distance. It comes in bloom about the first of Oct., and continues till near the first of Nov. The bees swarm on it and roar like a swarm. However, they can not gather honey so fast as from bass-wood; but they store so much honey, that I had to extract twice while it was in bloom to give the bees room to raise brood.

I have kept bees in Missouri for 12 years, and have investigated Arkansas and Kansas. I have read the honey reports in the bee-journals for 20 years, but have never read, or heard of any thing, or place, that will compare with this for bees and honey. Who ever heard of 14 swarms, and 600 lbs. good thick honey that weighs 12 lbs. to the gallon, from a start of one weak swarm in March? This, too, by natural swarming, and without the use of comb foundation, or any unusual exertion.

Tempe, Arizona.

JNO. L. GREGG.

The plant from J. L. Gregg is *Hyptis Emorgi*, Torr., belonging to the mint family (*Labiata*), to which so many of our best honey-plants belong. Its late blooming must make it valuable for bee pasture. I think it has never been found east of the Mississippi.

W. S. DEVOL, Botanist.

Ohio Ag'l Exp't Station, Columbus.

FETID MARSH-FLEABANE.

I send you by this mail a weed, called here polecat weed.

E. A. BUTLER.

Terry, Miss.

Plant sent from Terry, Miss., by Mr. E. A. Butler, is the fetid Marsh-Fleabane (*Pluchea foetidis*, D. C.). This and allied species are found generally distributed throughout the eastern, southern, and middle United States, some of them in salt marshes and others in fresh-water marshes and along the banks of streams and shores of ponds, the above-named species being one of the latter class. Like most of the order *Compositae* it blooms rather late in the season—August to October. It grows 2 to 5 ft. high, minutely pubescent and glandular; leaves opposite, 5 to 8 inches long, coarsely serrate, resinous dotted; the small numerous heads of purplish flowers on slender pedicels are clustered in a panicle or paniculate corymb.

Columbus, O.

W. S. DEVOL, Botanist.

MOUNTAIN SPINACH.

I was advised to send you a specimen of something that grew in my flower-bed. We supposed at first it was some of the seed I had sown. It had at first a faint resemblance to sunflower, and grows seven feet tall. The plant was examined by a great many, and no two agreed as to what it was.

Marengo, O.

MRS. ABBEY A. SHERMAN.

The plant from Mrs. A. A. Sherman is Orache, or Mountain Spinach (*Atriplex hortensis*). It is a hardy annual 2 to 3 ft. high, very popular in France, into which country it is said to have been introduced in 1548. It is little grown in the United States, but seeds freely, and in some gardens becomes a troublesome weed.

W. S. DEVOL.

Columbus, Ohio.

Please name, and tell how inclosed plant ranks as a honey-plant. It is known here as a bad weed in young corn, and is called "Torment," or wild mint. Dorchester, Mo.

WILL T. ZINK.

The specimen from W. T. Zink belongs to the mint family; from the small cluster of leaves sent, and no flowers, I am unable to determine the species. If Mr. Z. will send specimen when in bloom I will endeavor to name it for him.

Columbus, O.

W. S. DEVOL.

PRIVET.

I send a specimen of a shrub now in bloom, which is every year covered with bees, and doubtless yields much honey. Will you please name it for me?

S. W. MORRISON.

Oxford, Pa., July 9, 1885.

Specimen of flowering shrub from S. W. Morrison is Privet, or Prim (*Ligustrum vulgare*, L.) found in woods and thickets in N. Y., Pa., Va., and westward to the Mississippi River, supposed to have been introduced from England, but this is doubtful. It grows 5 or 6 ft. high, and bears numerous small, white flowers.

W. S. DEVOL.

Columbus, O.

T. LANCEOLATUM; A FIRST COUSIN TO THE BASTARD PENNYROYAL.

Inclosed please find another specimen of the honey-plant I sent you for identification. The corolla is too deep for the bees to get the honey in the usual way, so I went to see how they did get it. The bee catches hold of the flower, and presses with his tongue and fore-feet at its slender neck, till it cracks enough to get his tongue in; then he slides it like lightning along to the honey. It was funny to see how eagerly he would slide his tongue along to the honey when he once got in. They did not appear to be able to get into some of the blossoms. This was something new to me, and I hardly knew whether to believe the bee made the crack or not; so I tried it with the point of my knife, and I found they would crack at the neck with a very slight pressure. Some would not crack at all; these may have been too old and not brittle enough. We sow wheat and oats for hay, and mow it in June. After a month or so, this plant comes up as thick as it can stand and lasts two or three months.

Soquel, Cal.

HENRY R. DAKIN.

The pretty little plant from H. R. Dakin is a species of blue curls (*Trichostema*). It is known to botanists as *T. lanceolatum*, Benth., and is a first cousin to the bastard pennyroyal so often spoken of in this department of GLEANINGS. It is a strong-scented herb with a soft pubescence covering the

whole plant; leaves about an inch long, entire; flowers purplish, borne in axillary clusters; stamens long exerted, curled. It is quite an interesting plant, about a foot high, the stems very leafy. Another species is found in the same vicinity, which strongly resembles this one, but the leaves are further apart on the stem, and the odor differs slightly.

Columbus, O. W. S. DEVOL.

MODERN TRANSFERRING.

FRIEND HEDDON'S METHOD.

IN response to your request I will tell you how we proceed to transfer bees from mixed styles of hives to our own favorite hive.

About swarming time I take one of my Langstroth hives, containing eight Given pressed wired frames of foundation, and, with smoker in hand, I approach the hive to be transferred. First, I drive the old queen and a majority of the bees into my hiving-box. I then remove the old hive a few feet backward, reversing the entrance, placing the new one in its place, and run in the forced swarm. In two days I find eight new straight combs with every cell worker, and containing a good start of brood. Twenty-one days after the transfer I drive the old hive *clean* of all its bees, uniting them with the former drive, and put on the boxes if they are not already on. If there is any nectar in the flowers, this colony will show you box honey. I run them together as I would one colony in two parts. Now to the old beessless hive. Of course, there is no brood left, unless a little drone-brood, and we have before us some combs for wax, for more foundation, and some first-class kindling-wood.

If you have no method by which you can use a full hive of frames, of full sheets of foundation, running a full swarm into them at once, by all means procure it without delay. But if any one has a mania for cutting up combs and fitting them into frames, my method given above does not prohibit them from using all the straight worker-combs the old hive contains, after first extracting the honey from them. Should any one wish to increase his colonies at the same time he transfers, only the following deviations from the above are necessary: Run the second drive into another hive of full frames of foundation, and use the old hive as before. Now that we have foundation perfected, so that the bees will draw the lines or side walls to full breeding depth, in from two to three days, why fuss with the old comb from the old hive? Having once experienced the advantages to be attained by using the above method, I shall certainly never go back to the old one. All of you know what a nuisance a few odd-sized hives are in the apiary; also some who have just started wish they had adopted some other style of hive. The above method of transferring will get all such out of their trouble.

The cost of foundation and new hives is fully made up by the better combs, and you have the change to better style of hive thrown into the bargain. I have thoroughly tested the results of the plan herein described, and am speaking from experience.

We have just practiced the above upon 72 colonies, and without a failure or mishap of any sort. I purchased 16 colonies of bees; that is, I purchased the bees, brood, and honey, with the agreement that I should return the hives and empty combs,

which I have done. We made each one cover two sets of combs in two brood-chambers, with two queens, besides the surplus sets used above for extracting, and all are rousing strong. When you plan to double your colonies, you remove the old colony to an entirely new location, when you make the first drive. It is now my opinion, that, even without the use of comb foundation, in the days when we had none this plan of transferring would have been the preferable one. As we are cutting out the old combs for wax, we transfer any that we find, that are *perfect*, now that they are all clear from bees, honey, and brood. JAMES HEDDON.

Dowagiac, Mich., Aug. 6, 1885.

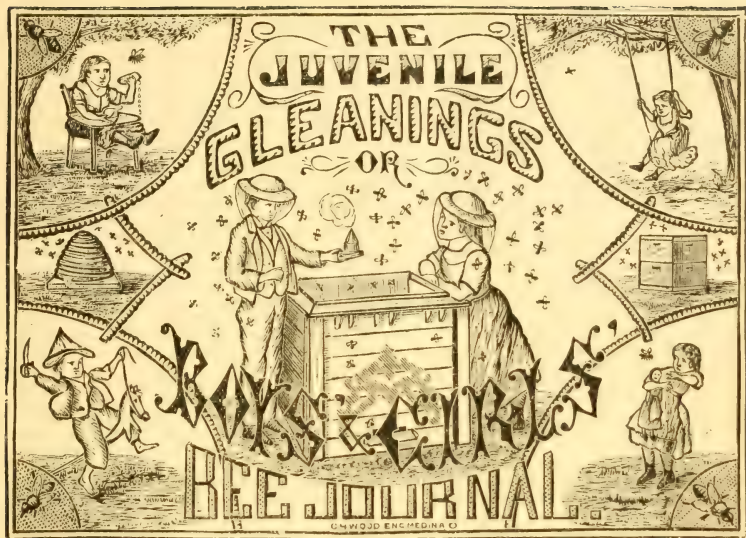
Friend H., in your concluding sentence, "Clear from bees, honey, and brood," I can readily understand how you are clear of *bees*, and, after the last drumming-out, clear of *brood*; but, how about the *honey*? Old box hives at swarming time, in our locality, are usually heavy with honey; and one great obstacle in the way of your method is some way of disposing of this honey. There is also more or less freshly gathered pollen, which we here consider worth even more than the honey, early in the spring. I presume enough of the old bees will go back into the hives to care for the unsealed brood, so that none of that is lost. The point you mention, of getting rid of the dauby and troublesome process of fitting old pieces of comb into frames, and fastening them by means of splints, transferring-wires, etc., is, I grant, a big step ahead. We decided long ago, in our own apiary, that we wanted no more combs at any price, that were not built on frames of wired foundation.

INTRODUCING VIRGIN QUEENS.

AFTER I saw G. M. Doolittle's article on introducing virgin queens, in Aug. 1st GLEANINGS, and as I had such a splendid opportunity to test it, I prepared to my nuclei this morning, and will give you exactly what I experienced on July 31st. I introduced 21 virgin queens to nuclei that had their queens taken away the day before, excepting three that had been queenless for several days. Of those virgin queens some were caged 15 days in the nursery, and some were caged only 3 days. I let them run in at the top of the hive, and they were, to all appearances, safe when I left them.

To-day Aug 5, I examined the nuclei, and found 9 missing from the 21. One of the three that were several days queenless accepted the one given them; the other two killed theirs. I found only one of them laying. Only one of the queens had her wings injured so that she could not fly when taken from the nursery. I destroyed her. All the others were fine large queens. About two weeks ago I tried another lot. The queens were just a day old, and the nucleus had been queenless about 2 days. I lost only two, I think, out of about 15, and some that had just hatched were accepted at once. I believe the action of the queens has every thing to do with safe introduction. I let one into a nucleus and she set up a terrible piping, as much as to say she was ready to fight any thing. The bees accepted her at once. Had she started to run she would have been killed. W. J. ELLISON.

Stateburg, S. C., Aug. 5, 1885.



He that is faithful in that which is least, is faithful also in much. LUKE 16 10.

MYSELF AND MY NEIGHBORS.

If any of you lack wisdom, let him ask of God, that giveth to all men liberally, and upbraideth not; and it shall be given him. — JAMES 1:5.

WHAT a grand thing is wisdom! I shall not take space this morning to illustrate how true is our text, to any great extent, but I shall confine myself mostly to showing you the importance of wisdom. Let me give you a little sketch of my dealings with my neighbors for the past twenty-four hours. While I was out in the field, a man came along wanting my name on a paper. The undertaking was a grand one, and I could wish it God speed with all my heart. But it was something out of my line of work, and I asked why he wanted my name first. He said he wanted it started by a man universally known in our county, and one who is known to be straight and upright in business, etc. He urged that my influence might help him greatly in getting the good cause started. I hardly need tell you that I am opposed to putting my name on any paper carried by a stranger. He showed me similar papers that had been carried around in other counties, and I pronounced the signatures genuine, and as belonging to the best men I know of, many of them; but I objected, until I knew more about him and the new movement. He asked me what he should do to remove my objections. Here is where I wanted wisdom to answer. I finally told him that, if the pastor of our church, and the deacons of our church, would give it their sanction, I would, if he

wished, head the list. Was it a wise thing to do? I thought so, and think so still. The pastors of our churches, and the deacons, are the best counselors I know of in the world, especially in a matter like the one presented.

We have been having exceedingly wet and rainy weather. Farmers all around are worrying about their grain, and the thrashing-machines have not yet got started, because, just as soon as the grain begins to be so it would answer tolerably well to thrash, it rains again. Thrashers were coming tomorrow, and my four acres of wheat and rye would do pretty fairly. But just at dusk one of my near neighbors, who has thirteen acres of wheat, and who makes farming his business, called in my absence to inquire if I couldn't possibly let the thrashers do his grain first. One of the boys said he would present the matter to me when I came home from the railroad meeting, and then added: "Now we will see whether Mr. Root loves his neighbors as himself."

On the way home from the railroad meeting my neighbor met me. The question came as before, "What ought I to do?" What would a wise man do under similar circumstances? I told him to tell the thrashers that they should do his first (you see I did not know they were watching me to see how my *Christianity* would hold out). He had a good deal more than I had, and he has been a very kind neighbor, and I felt it a privilege to do him a favor. It is true, it rained before the thrashers got through with mine; but I have not been

sorry a bit. In fact, I felt glad to think my neighbor got his thirteen acres secured in nice shape. They commenced on mine about four o'clock. There were indications of a storm when we got started. If nothing happened we would get through before dark and before the storm. One of our best men, and one who usually handles the team, said he could pitch it on faster than the boy who was pitching it, if I thought it best for them to swap places. The boy, although a splendid one for any kind of hard work, was not much used to handling a team; and, against my better judgment, I consented to letting him load and drive. The load was on, and they were hurrying to reach the machine before the other load was off, when he uncautiously drove near where an under-drain had been made some time before. The wagon-wheels cut into the soft damp ground so that the load was stuck. The storm and night had almost come. What did wisdom dictate? My decision was to stop the machine, drive the other empty wagon alongside, and pitch off part of the load. One of the men belonging to the machine said he could make that team pull that load out of there. He worried the team, strained them to their uttermost, broke two whiffletrees, and even then did not get it out. Another man said his team would pull it out. I begged to have the empty wagon run down and take it slowly but *surely*. The new team broke the harness; and when they got it fixed, the horses got discouraged and would not try any more. Then scantling and plank were carried to pry the wheels out. After a delay until it began to sprinkle, indicating the coming of the storm, my plan was adopted. Now, I am very well aware that many good teamsters (which I am not) will often get a load out by *making* the horses take right hold of it when they think they can't do it; in fact, I have seen a good many loads pulled out, when I should have gone for another wagon. But all things considered, I like my way best. I do not like to see horses whipped, nor made to strain themselves to their uttermost. How often a little wisdom will help the work along! In this case a lot of hands stood idle a long while, while the rain came up and night came on, which might all have been avoided had I listened to the convictions of my best judgment, and not intrusted any one but an experienced driver, and one who knew the "lay of the ground." When the rain began to come down so as to make sure that the work must be stopped, all hands turned in and worked like "beavers" in loading what we did not get thrashed, on to our three empty wagons, and pushing them into sheds and warehouses, until by eight o'clock our grain was all secure. Men and teams worked hard, and strained every nerve, without supper or feed, until my property was secured. We are all human, and we all lack in judgment many times; but as I went to bed that night I had reason to thank God that our little band during that emergency were *honest* and *true*, for not even the smallest boy had shown the least bit of objection to their severe hard work, without a bite of supper until long after their usual time.

This morning our colt "Nancy" is sick. She probably worked too hard, especially as it was slippery and severe on a horse without shoes. Some of the friends declared that I had better send for a "horse-doctor." Now, then, where is wisdom once more? If I knew of an *educated Christian* man who has a good reputation for doctoring horses, I should gladly send for him. Do they have such in your neighborhood, friends? I considered the matter a while, and finally declared that if Nancy were going to die, she should die in the natural way, and not from the effect of powerful drugs which I have often seen administered to sick horses, and the poor dumb friends died after all. "Even the most powerful kinds of medicine wouldn't save them," so the horse-doctor said. Now, dear friends, very likely I have not any great stock of wisdom; but this one thing makes me feel happy: I am searching diligently for wisdom day by day; yes, pleading the *promise* God has given at the head of this little talk.

P. S.—Nancy is dead! When it was certain that her malady was no trifling one, I sent for our family physician and two or three men whom I knew to be conversant with horses, and more or less accustomed to handling sick horses. I was pleased to know that the doctor had once studied as a veterinary surgeon; but he frankly admitted that it is often very difficult indeed to decide what is best to do with a sick horse, and he is as much opposed as I am to guessing at the trouble and then administering powerful drugs. Many times relief is given by mechanical means or appliances, and of course we should always spare no expense in availing ourselves of the most intelligent and experienced help in saving these dumb friends of ours from suffering. But let us hope that the age is fast passing away, of *guessing* at the trouble and then *guessing* again that something that would kill a well horse might possibly hit the trouble and correct it.

HAVING FISH FOR PETS.

SOMETHING ABOUT HOW TO KEEP THEM IN THE HOUSE.

WHEN I was young, and did not have much to do, I loved pets of all kinds; but my favorites now are fish, and I nearly always have some of one kind or another. As I write I can look up to a shelf by a shady window and see four lovely carp in a five-gallon demijohn. It is clear and nice, and the fish look as if floating in air. The bottle is two-thirds full of water. The largest fish is about four inches long; but in the bottle he looks to be six inches. I prefer a bottle to a globe, because they hold more water, and so it does not need renewing so often.

The first week after putting the little fellows in their cage you must change the water four or five times a day; but after that they will not need changing oftener than once a week. You can always tell when to change the water, for they will put their noses out of it and hang their tails straight down and float around that way. Do not put the coldest water you can get on carp, but let it be with the first chill off, or it will stiffen them right out

and they will not live so long. Be sure not to feed them; if you do you will have to change the water every hour, and they get so uneasy that they are no pleasure to look at. They get enough animalculæ from most waters to keep them. We kept two in a tank where the water was run off on to a strawberry-bed once a week; and when we wanted the water for drinking we killed the fish. One was full of spawn, and the other was fat. They had been in about eight months, and had grown considerably. The well water was beautifully clear and sweet, so they must have lived on the animalculæ, for there was nothing else that we could see; and, in fact, we did not see them; but scientists say that the water is full of them. I take their word for it without looking, as I know I could not relish the pure, clear-looking water if I had seen bugs and snakes in it.

The largest of my pets loves to jump. He will start from the bottom of the bottle and rush to the top of the water, and spring quite to the neck. His fins will make quite a noise as he strikes the glass. I thought he was after flies; but I caught and killed a couple and dropped them into the water, and they would never touch them.

Minnows make nice pets, and they will catch and eat flies, and in a short time you can teach them to come to the top of the water for food; but you must have lots of water and very few fish, to be nice. I have kept two fish, about two inches long, tail and all, in a half-gallon Mason jar, for a year. A candy-jar is prettier, as it is clearer, and they will pay for the trouble. Of course, gold-fish are the prettiest, but they are not always obtainable, and they are not so active as carp or minnows.

Little folks, try one glass of fish for pets, and you will be delighted with them as soon as they get accustomed to their new home. Mr. Root thinks may be the hot spring would be a good place for carp. I do not know if they could stand the sulphur; but if they could, wouldn't it be nice! The pond could always be kept warm by the water running into it, and they love warm water.

Some one made an incubator—that is, a machine to hatch eggs—and put it where the hot water could run through it, and I heard that it hatched out the eggs nicely. I want to go and see it; and may be I will some day, for I love to work with chickens. Light Brahmas are my favorites, but we are trying Plymouth Rocks this year, and we have an incubator that we are getting ready to set, and, of course, I am interested in all such things; but we can not all have hot-spring incubators. We all can have carp, or fish of some kinds, however, even if they do not bring us much money. When Mr. H. was at Santa Barbara last week, he and a friend went up to the Old Mission, and they saw a large reservoir back of the building. They went to it and saw a lot of large carp in it, and they were so tame that they followed them all around the reservoir, looking for something to eat. The men hunted in their pockets for some crackers; but not finding any, Mr. G., who uses tobacco, crumbled off some and threw that in. The fish would take it in their mouths and then spew it out again. The men had a good laugh at their evident disgust at the uninviting repast.

J. P. Israel's piece is very amusing. We hope he will come again. We think C. C. Miller will have to hire a cheap boy to hunt out the especial items for him—one who does not care to read much, and would go by the headings. I suppose he finds the extras so interesting that he forgets all about what

he had been wanting. I read every thing in GLEANINGS, although I am not financially interested in bees, and am not very good friends with them any way; but even the bee-articles are so spicy that I would not miss them for a considerable. But I prefer the carp and chicken stories, and especially the Homes and comments.

Los Alamos, Cal.

AUNT KATIE.

Thank you, Aunt Katie, for the instruction you give in regard to keeping fish in the house. A friend was down to see our carp-pond a few days ago, who said that a carp-raiser made his wife a present of two little fish not larger than a cucumber seed. They fed the fish on small particles of oatmeal, and he said that they doubled in size in only three or four days. Such pets are not only amusing to the children, but they are instructive. You, my friend, have learned that fish can live in a glass jar without being fed, etc.; and it seems to me that all the knowledge we gain of this kind, by practical observation and experience, helps us along in the world. When poor Nancy was sick, oh how I did wish that I knew more about horses, that I might be able to give her at least a little intelligent relief from her sufferings! When the man who took care of her came into the stable in the morning, even though she was too nearly dead to notice any thing she looked at him and whinnied.

THE TROUBLE THEY HAD AT CHARLEY'S HOUSE.

WERE THE BEES ROBBING, OR WHAT WAS THE MATTER?

THIS has been a poor season for bees so far. It has been cold and rainy. Our principal honey-plants are white clover, basswood, poplar, locust, willow, maple, and buckeye. We can tell when our bees are working on buckeye, by the bright-red pollen they gather from it. Basswood is plentiful in our vicinity. Maples are numerous in the swamps. The bees gathered lots of maple pollen in the spring. Mustard, tansel, goldenrod, dandelion, and pennyroyal are also plentiful. Figwort grows wild in the woods. Last spring we saw the bees of one of our large colonies rushing in and out at a terrible rate. Supposing that a neighbor's bees had overpowered it, we shut it up, and to keep them from robbing our other colonies we shut them up also. Soon thousands of bees gathered over the hive we supposed was getting robbed, and a smaller number on the other hives. The day was a warm one, and late in the afternoon we opened the hives. The bees that were on the outside were gone. Now, what became of those bees? This is a question that I do not see into. The next morning all the bees went to work, and the swarm we thought was robbed soon filled their hive, made some surplus, then cast a fine large swarm. What were these bees doing that day? Could it be that they were taking honey from a beech-tree? and if we have any more such experience, what shall we do?

Our bees at present are working on white clover. We have the A B C book, and I like very much to read in it.

CHARLEY L. GREENFIELD, age 13.

Somerville, Ohio.

Friend Charley, your bees were out having

a playspell, and you are not the first one who has been misled in just that way, as you will see by the A B C book. When you shut up the hive, the young bees that had for the first time in their lives been out trying their wings were compelled to cluster outside of the hive; and after they had watched a sufficient length of time, and nobody came around to let them in, I suppose they went to other hives, probably attracted by the humming of the returning bees toward evening. The smaller number you saw on the hives not shut up were the young bees going to the hives because they could not get in at home. Young bees out on a playspell will usually be permitted to pass without hindrance into any hive, just as you would let a baby right into your house without any objection, if it should happen to wander away from its own home. If you watch carefully you can tell robbers from bees having a playspell, by noting their behavior. The playing bees dance up and down in the air, seemingly, and they also have a brighter look than old bees, being lighter colored on account of the soft down that covers them about the time they take their first outdoor flight.

TOBACCO AND SNUFF.

ALSO SOME FACTS ABOUT ANTS IN THE SOUTH.

SEEING you have not disdained to publish my little report, encourages me to appear before you again in a social sort of way. The letters in GLEANINGS, as a rule, are so homelike and chatty that one is naturally impelled to be sociable in adding to them. In reading them I frequently feel inclined to have my say-so on some of the points talked of; though as regards bees I would not venture, for I know as yet comparatively little of them.

Of tobacco, I may say that I am opposed to its use in any form or for any purpose. I would be a "prohibitionist" as regards it, if it would have the desired effect. If you had seen as much of the habit of "snuff-dipping" as I have been unfortunate enough to witness, you would not be able to say that our girls do not use it nowadays. Among a certain class of people South (generally mill and factory operatives), it is a common practice for the women to dip snuff; and many, many girls, even the little ones four and five years old, are brought up in the filthy, detestable habit. This, however, is a habit by no means confined to factory operatives; for many country girls become addicted to the use of the vile stuff; and seemingly it is as hard for them to give it up as it is for men to part from their dear tobacco-quids. In central Alabama I was astonished to find among a *nicer* class of ladies that the habit was practiced, though in justice to them I must say it was strenuously concealed whenever practicable, from all outsiders who would not "dip." You must know that the Southern factory operatives are as yet a different class of people from the New-Englanders of the same occupation. I have heard my grandmother (who is a Vermonter) say there is a vast difference. In course of time I trust the class down here known as "factory folks" will be on a par with the renowned "Lowell girls" of Massachusetts. As yet they constitute an illiterate, oily, "unwashed" class.

ANTS.

I hope you do not imagine that all over the South the bee-keeper has to fight against the ant. If you should be under that impression, let me disabuse your mind of it at once. There are many places never troubled with the industrious little nuisance, while some others are infested. For instance, we seldom see any here; yet about sixteen miles distant on our plantation one can scarcely look on the ground without seeing some running one way or another, and it is pitiful to see the little chickens following the mother hen and keeping up a constant dance, in order, if possible, to escape the bites of these little dark red ants.

I'll tell of an experiment of mine. I read once of the different kinds of stings that ants have—that is, some large red ones have a barbed sting like the point of a fish-hook, so that he is obliged to leave it in a substance too tough for him, as a bee does; but the common little ant merely bites. I thought it would be interesting to test the truth of the matter; so one afternoon I took a walk alone, to a red-ant hill whose location I well knew, and, seating myself beside it, I watched them awhile and then I carefully caught one and allowed him to run up my arm. Soon finding a spot to suit his purpose he inserted his sting a little below the elbow; and when he freed himself his sting remained, with a portion of the vitals, while the ant ran wildly about, then disappeared in the crowd, soon to perish, I suppose. I was satisfied fully of the truth of what I had read; but I was not content to let the ants alone. I caught and tried another with the same result; then more, until when I had finished I was the contented possessor of five stings on my arm. By this time my arm was itching, and was considerably inflamed. I walked home. When, by reason of the pain and itching, I could conceal my uneasiness no longer, I explained at the house what I had done, and was laughed at for trying such an experiment on myself. I went to my room, and was still suffering all the agonies the large red ant is capable of inflicting on a system rather susceptible to the effects of such poisons, and was in tears by now. I heard a voice calling me. "Bert! O Bert!" it called gently. My heart swelled; it was one of my brothers, and I thought, "Now I shall have some sympathy." I answered his call. This is what he said to me: "I say, Bert, had you not better send the result of your experiment to the New-York Entomological Society?" I "collapsed." I have never tried to investigate the different species of ant-stings since.

BERTIE NORRELL.

Augusta, Ga., June 21, 1885.

Friend Bertie, I am afraid you are a little severe on your neighbors who work in the factory. There are factories here in Ohio where drinking, swearing, and tobacco-using are the rule; and then, again, there are others where such things are not known at all. I believe that the boys and girls who work in our factory are considered quite as respectable and intelligent as any class of people we have; and I am inclined to think that it is becoming more and more customary with the proprietors of shops and factories to insist not only on temperance in the matter of drinking, but in the choice of language, etc. Of course, in many kinds of work it is not possible for the operatives to avoid dirt and grease; but this fact should never be considered a reason to look down

on them.—We are glad to hear of your experiment in regard to the ants, and the way in which they sting.

SUNDAY SWARMING.

GETTING A SWARM FROM A HIGH TREE.

ONE Sunday a large swarm of bees came out and settled very low upon a peach-tree limb. It stayed about two hours, and then started off toward the east. If it had been a week day we could have hived it. Before this, all swarms that came out on Sunday stayed till Monday; but this one did not, so we went to work next Monday morning with sad hearts. Pa went to work in the orchard, and sent my brothers and me to hoe in the garden, and told us when we got done to go where he was. Just as we got done in the garden at 11 o'clock, we heard a loud hum which sounded like bees passing over. Brother Finney ran out at the back of the watermelon patch, and found a large swarm of bees in the top of a high white-oak tree. Pa said it was almost too late for them to leave, and told us to work till twelve o'clock and then we could hive them. I was looking all the time for them to fly away, and I tell you I did not eat a very hearty dinner that day.

I was soon seen climbing up the tree, with some rope in my hand. The rope was made fast to the limb, then to the tree. Mother was at the foot of the tree, while my brothers cut. Pa was not in sight. When the limb was sawed off, the rope broke and the limb fell down, and there was a little scattering out at the root of the tree, especially among the younger boys. These words were often repeated: "Are they stinging you much?" No answer. After a while, "Are they stinging you much? Why don't you answer?"

At last it came. "I was shutting my mouth to keep the bees out. They are flying all over me, and stinging me on the head."

One of the boys was soon seen running toward the house, with one eye larger than the other. Finney kindly gave me the swarm. They settled on a smaller limb. I got another rope, then tied it to the limb and sawed it off and let it down and hived them, and they lived and did well.

After a while I sent \$3.00 for half a pound of bees and a queen; but when they arrived they were all dead but the queen and a few bees. I put them in a hive with a frame of brood, and next morning I went to see how they were getting along, but they were gone. On looking around I saw a few bees crawling in the grass, so I looked for the queen, but in vain. So I went to the house, feeling very sad—money gone and bees gone, and no money to send for any more. I guess you know how I felt.

About 11 A. M., mother said that the bees kept flying around the house and told me to look after them. When I looked, where do you think I found them? On the top of the house, under a board! We hived them and moved an old colony, and set the new one in its place, which made it a strong colony; so now I have three colonies of Italian bees, and all doing well.

B. J. TAPLEY.

Columbus, Miss.

Thank you, my friend, for your graphic and interesting letter; but it seems to me there would be no harm in hiving bees that settled upon a peach-tree limb, even if it

were Sunday. Of course, I should not want to go up into a tall tree with ropes, etc., on the Sabbath. The point you make, in regard to being sure that you have a rope that will not break, is a good one. I have heard of just such mishaps before. The foliage on a large limb is pretty heavy, and you want a good stout rope. If your half-pound of bees arrived mostly dead, the man who sent them to you certainly ought to credit you with their value; at least, that is the way we do business. You very properly went to work as well as you could to save the queen, so the shipper ought to feel grateful to you for saving him so much, even if the bees did die.

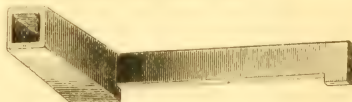
A SIMPLE DEVICE FOR EXCLUDING DRONES.

A DRONE-EXCLUDER MADE OF A SINGLE PIECE OF WOOD.

MAIL to you what I call a drone-excluding device. I think it ahead of Alley's in every way; handy to make, cheap, nothing to rust. Place it at the front of hive, tuck it so the drones can not move it, then see them come out of the tube. When they come back they alight on the hive, or at the entrance of hive. They will never find the place where they got out. Try it and see; if it is of any use to you or any other man, let him have it. You see, I trapped wild turkeys. This is the same, only the drones come out to be killed, while the turkeys went in. Bees are doing finely.

B. F. SPAFFORD.

Morning Sun, Iowa, July 27, 1885.



SPAFFORD'S DRONE-EXCLUDER.

The friends will notice that this device is made entirely of wood. The square tube is $1\frac{1}{4}$ x $\frac{1}{2}$ inch at the large end, and $\frac{1}{2}$ inch square at the small end. The hole is about $\frac{1}{2}$ inch square; but I presume a round hole, cut square and funnel shape at each end, would answer equally well. The arm projects 5 inches. A notch is cut in one side of this arm deep enough to let the worker-bees through, but exclude the drones. The device has to be placed over the entrance of the hive, and fastened so it can not be moved away. The worker-bees in going out can go through the tube or under the bar, as they choose. The drones, finding themselves unable to get under the bar, will gradually work along until they go out of the tube, and I can readily believe they will never think of going back the way they got out. These devices should be made at a price not to exceed 10 cents each. If wanted by mail the postage will be 5 cents extra. I should be glad to have friend S. tell us how long he has used this arrangement, and how it answers under all circumstances. I suppose we should have to have metal for the bee-space, if we expect to restrain the queen as well as the drones; but wood will answer perfectly well for drones only.



Every boy or girl, under 15 years of age, who writes a letter for this department, CONTAINING SOME VALUABLE FACT, NOT GENERALLY KNOWN, ON BEES OR OTHER MATTERS, will receive one of David Cook's excellent five-cent Sunday-school books. Many of these books contain the same matter that you find in Sunday-school books costing from \$1.00 to \$1.50. If you have had one or more books, give us the names that we may not send the same twice. We have now in stock six different books, as follows; viz.: *Sheep Off*, *The Giant-Killer*, *The Roby Family, Rescued from Egypt*, and *Ten Nights in a Bar-Room*. We have also *Our Homes, Part I*, and *Our Homes, Part II*. Besides the above books, you may have a photograph of our old home apiary, taken a great many years ago. In it is a picture of myself, Blue Eyes, and Caddy, and a glimpse of Ernest. We have also some pretty little colored pictures of birds, fruits, flowers, etc., suitable for framing. You can have your choice of any one of the above pictures or books for every letter that gives us some valuable piece of information.

"A chiel's amang ye takin' notes;
An' faith, he'll prent it."

WELL, little friends, it is now August, the month that usually furnishes us the dry hot weather. But it is not dry here at all; in fact, it rains almost every day, and the under-drains carry so much water into the carp-pond that it is full, and running-out at the outlet almost all the while. When the water rises so high that the carp can get up and nose around the grass on the bank, they enjoy it amazingly—especially when the water is very warm. The other morning I went down to the pond very early; and so many great big fish were busy at the roots of the grass along the bank that I thought perhaps I could catch one and carry it up to the house to surprise Huber and the rest of the family. I got down on my knees among the tall grass and weeds, and waited until a great big one came up right before me. The water was so muddy he could not see me at all, and I waited until his great shining back was right up between my two hands. I thought I would make real sure, and so I moved my hands down until they almost touched him, and then made a grab. Do you think I got him? Not a bit of it. I guess we both felt somewhat astonished. The minute one finger touched his back he made the biggest flop you ever heard of, and threw the water all over me, and was gone somewhere so quick that I couldn't tell how or where. Just then I heard a chuckle upon the fence; and, looking up, I saw a squirrel acting just as if he were holding his sides to keep from laughing. When I turned he started off along the top of the fence; but he made a sound as if he were chuckling still. I washed the muddy water out of my eyes, and went home just in time for breakfast, where I told my adventure; but I didn't have any great big fish to show them, as I had planned.

KIND WORDS FROM ONE OF OUR JUVENILES.

My papa keeps bees and thinks a great deal of his A B C book he got of you, and doesn't know how he got along without it, and also takes GLEANINGS. Mamma thinks a great deal of Our Homes in it. He has twelve stands of bees. Papa bought that nice queen you sent to Mr. Essick (as he found after sending to you that his bees had foul brood). Papa likes to deal with you, as you are so prompt.

Grand Ridge, Ill.

LIZZIE A. PARMLEE.

My papa had 20 swarms of bees last fall; five of them died in the winter. One of them lost their queen this spring. Papa gave them a comb with larvae in, but they would not build queen-cells. He looked two or three times, but could not find the old queen, so he put a weak swarm in with them, and now they are all right. Nearly all the bees died around here the past winter.

MARY WILLSON, age 9.

Newmarket, Ont., Can., June 4, 1885.

A FAVORABLE REPORT OF THE FOUNTAIN PUMPS AS A SWARM-ARRESTER.

We had a swarm of bees the other day, and they stayed on the tree about three hours, and then they started to go away. Mamma went and got the fountain pump, and threw the water up in front of them, and they thought it was raining, and they turned and came back and went on another tree to see if it was really raining. Then we got them and put them in a hive.

ALICE McBAINE.

Cokeville, Pa., June 5, 1885.

CROSS BEES, AND FLORA'S PROPOSED REMEDY.

Grandpapa says Mrs. Harrison need not kill her cross bees. Just make a false man and set it up before the cross bees, and let them have their fill stinging that. We have only one stand of hybrid bees, and they are as cross as the letter X. They will go four or five rods to sting a person.

Daisy, Kansas.

FLORA A. CONSTOCK.

Although I have never tried your plan, Flora, it does not seem to me as if I should want to do any thing that would make bees sting worse. My experience has been, that it is best to teach them to forget their stings as much as possible. By the way, I think I would apply the same treatment to little girls and boys. Have them taught in such a way that they will forget that they have the power to sting or hurt the feelings of anybody.

HOW TO TEACH FISH TO RING A BELL WHEN THEY ARE HUNGRY, ETC.

Pa has 14 stands of bees. He divides them in stead of letting them swarm. Pa is very much interested in carp culture. I read in a little paper pa has, that fish in Japan are taught to ring a bell when they get hungry. The way they learn to do it is to hang a silk cord in the water, with a little piece of bait on it. The fish then see that it is something to eat. They catch hold of it, and give it a jerk, which rings the bell. Pebbles are afterward tied to the cord. They will then catch hold of the pebbles when they get hungry, and thus ring the bell.

AMY J. HOLLEMAN.

Wager, Ark., June 1, 1885.

RASPBERRY-BLOSSOMS, CHICKENS, ETC.

The bees are working busily on the raspberry-blossoms and clover, especially the alsike. We have had ripe strawberries for two weeks. I hope

Huber has had some by this time. You seem to have had bad luck with your chickens. But if you had washed the eggs clean in luke-warm water they would have been as likely to hatch as at first. Of 90 little chickens hatched, we have lost but ten. Well, I will close by telling you that to put a swing up in or near the bee-yard is the way to get the children to watch the bees in swarming time. Papa always puts one up for us, and we like it pretty well.

ETHEL I. BEATTY, age 14.

Shaw's Landing, Pa., June 20, 1885.

HARD CIDER "HARD" ON BEES.

My brother-in-law lives about fifty yards from where we do. He had a barrel of vinegar sitting out in the yard making, with a cloth tied over it. His bees cut a hole in it, and they got drunk. They were stumbling about, and stinging and falling all over the place. This is the truth. Did you ever hear of bees getting drunk before? He covered it up, and the next day they were all right.

Collinsburg, La.

JOHNNIE DUDNEY.

Yes, friend Johnnie, I have heard of bees getting drunk before, but I have always been a little incredulous. Are you sure they did not get their wings daubed so they could not fly, that made them tumble about in the dirt? Bees are apt to do this when fed in the open air with any kind of a feeder, unless the honey or syrup is made very thin by adding water to it.

ABOUT THAT BEE-TREE.

My pa and uncle robbed four bee-trees this spring and we had some very fine honey and sold the bees-wax for 12½ cents a pound. We tried to save some bees from the trees, but could not; they would not go in the hives. My pa found a little oak this spring that had a swarm of bees lodged on it. He took his ax and cut the tree down and tried to save the bees but failed. He left the hive there all night, and in the morning the bees were all gone, so he brought the hive home. We have a great many wild flowers here, and some wild honey in the woods. I am anxious to learn about bee-raising, and if I can get the money I will take GLEANINGS, and try to raise bees. I love flowers and so do they. I have my window garden of flowers, and we are independent girls; we saw and nail our own flower-boxes, and put up the shelves, and I think we can make a hive.

SARAH L. MARTIN.

Bayou Chicot, La.

HOW WE HIVED A SWARM OF BEES.

One day last spring my father had gone away, and while he was away the bees swarmed. Well, I ran to the field after my cousin, who is about 20 years of age. He was working for my father. We did not think he would be of much help, because he was such a coward around bees. Well, they had alighted on a big limb—so big that we could not cut it off, because it would spoil the tree, so we spread a table-cloth on a stand, and then placed the hive on it under the bees. We dared not go up so close as to shake the limb, so my cousin took a long rope and went up to the limb very carefully, and tied the rope to it; then all of us—my sisters and brother, cousin, and myself—got hold of the rope about a rod from the limb, and then we would all jerk at the same time. Well, we managed to get a few of them off, but not enough to amount to any thing. My cousin got stung three or four times, and then he had his overcoat and mittens on, and a veil over

his face. I guess he must have sweat some, for it was a very warm day. Well, my sister Nettie plucked up courage and went up and shook them all off, and never got stung, and then we got them in the hive all right, and did not have any more trouble.

IYA A. PECK, age 12.

Jackson, Mich., June 3, 1885.

REPORT FROM A JUVENILE.

Our bees were gathering honey lively until bass-wood ended. The honey which the bees gathered so far is of the finest quality that we ever see or tasted—so white and sweet.

Ligonier, Ind.

A SUBSCRIBER'S SON.

NETTIE AND HER EDUCATED HEN.

I have an old hen, and her name is Mabel. She has 18 little chickens. I take her and set her on a box, and tell her to sing me a song, and she will begin and sing a few moments; and if she does not sing long enough I tell her to sing some more, and then she will sing until I tell her to stop. I keep Mabel and her chickens in a coop. One morning all of her chickens got out of the coop and went off in the pasture, and I went and got her and asked her if she knew where her chickens were, and she answered me in some language, I do not know what kind; so I took her out where her chickens were, and I asked her if she was glad I took her to her chicks, and she answered me. My old hen is a pure buff Cochins. There is a lady who engaged our eggs one year ahead, so as to be sure to get the pure buff Cochins. She takes all the eggs we have to sell. We keep about 30 hens. My brother keeps bees; he has three colonies.

Woodstock, O.

NETTIE CRANSTON, age 10.

WINTERING OUTDOORS WITHOUT ANY HIVE; A REPORT FROM ONE OF OUR JUVENILES.

Mrs. Mary Anderson, near Antrim, Guernsey Co., O., had a swarm of bees July 4th, 1881. They hived them in a new box. In an hour they came out and went back; but instead of going in they went under the bench and built combs extending from the bench to the ground, a distance of 12 inches, and 20 inches in width. They had no protection except a picket fence, and a few loose boards that stood on the west side to prevent the snow from blowing in on them. In this condition they wintered successfully while several other stands on the bench died. One of their neighbors, a Mr. Griffith, transferred them in the spring, and pronounced them good. They were the black, or brown bees. The lady who owned the bees lives about four miles from our house; and as it was something new to me about bees, I thought I would write it to you.

ANNA B. MCGREW, age 10.

Milnersville, O., July 8, 1885.

Friend Anna, there are a good many cases on record quite similar to yours; and I believe that a great many times our bees would winter all right if put under a bench, without any hive at all, where they now die by the hundreds and thousands. These cases point clearly to the fact that our bees are too closely packed up; that is, they do not have air enough; and such facts have come to light year after year for almost centuries. It is doubtless true, that they will do better with some protection than with no protection at all; but the protection ought to be in such shape that it permits air to pass freely, around and through the cluster of bees. A

chaff hive with the entrance open the full width in winter, as it is in summer, and loose leaves or loose chaff above the cluster, seems to me would be about the thing.

Pa has five swarms of bees, and one of them is an Italian swarm. He has log hives five feet long and 32 inches in diameter. They are hollow, and there are little doors in each end, and he takes the honey out of the little doors. I like honey. MILLY KEYSER.
Wilksport, Ont., Can.

I am twelve years old, but I must write about bees. Bees were introduced into America from Europe; they were first brought to South America in 1845, and California in 1850. The Indians called bees the white man's fly, because it followed where he went. EUGENE HOLZER.

Allerton, Iowa.

HEDDON PLAN OF AFTER-SWARMING.

Ma has 40 stands of bees. She lost eight stands last winter. She did not lose as many as the most of the people. It was very cold here. My ma takes GLEANINGS. She had only 21 stands in the spring, and now she has 40. Ma tried the Heddon plan, and did not have any after-swarms at all. I read GLEANINGS when there are letters in it. ANNIE COCHRAN.
Macon, Ill.

WHAT AILED THE BEES?

Papa bought several stands of bees, and the most of them died last summer. Could you tell what was the reason? ETTIE FARIS.
Huffman, Ala.

Friend Ettie, it is pretty hard to tell why the bees died in the summer time, without knowing more about the facts in the case. Perhaps they lost their queen, and dwindled away. I think the A B C book would help you to find out what the trouble was.

THE CALVES, THE DOG, AND THE SHEEP, AND THE WAY THEY MANAGED TO FIND NAMES FOR THEM AT JESSIE'S HOUSE.

My father takes GLEANINGS. We have an extractor that we bought of you several years ago. Brother has three calves, named Cleveland, Hendricks, and Tilden. Sammie has a little dog named Huber, and two sheep named Doolittle and Novice. I am one of six children, Baker, Fannie, Jessie, Ellie, Thomas, and Susie. JESSIE SMYLLIE.
Caseyville, Miss.

HOW TO HIVE A SWARM OF BEES, DESCRIBED BY ONE OF OUR JUVENILES.

My aunt Fanny keeps bees, and one day they swarmed, which is something I had never seen them do before. On my way to school I heard an awful noise, and I knew in a moment what it was. Then I ran into her house and shouted at the top of my voice, "Aunt Fanny, your bees have swarmed!" But I could not find her; so I ran over home and told mamma the whole story. She ran out to look at them, while I ran up the road to find my aunt Fanny. I saw a boy, and he said she was up at his house. After I ran up there and told her, she jumped and caught up her shawl and said, "What! have those bees swarmed again?"

"Yes," said I.

Then she told me to run down on the new road, and get my uncle William, who was cutting bean-poles, which I did. We got into the wagon and drove home as fast as we could. Then we fixed

the hive all ready beside the other hives, and then my uncle William took a saw and sawed off the limb upon which the bees had gathered, and placed it in front of the hive. Then my aunt Fanny sat down beside them and took a little branch off a pine-tree, and tickled the bees on their backs, and made them go into the hive. I lay down in front of the hive, and laughed to see them stand on their heads as they went in. HERBERT A. HODSDON.

Center Ossipee, N. H.

Friend Herbert, your description is real good; and I presume that, by the aid of it, one who had never hived a swarm would manage pretty fairly.

BEES THAT MAKE HONEY, BUT DON'T SWARM.

My brothers had a swarm of bees summer before last that swarmed six times, and went back to the hive every time. It died the next winter, and had a lot of honey left in the hives. What is the matter with a swarm that makes lots of honey and doesn't swarm? My brother has got a swarm of bees that have not swarmed for three years.

Douns, Ills.

Why, my little friend, I should say that nothing was the matter; but on the contrary, the bees are doing exactly what we want them to do. If you could advertise a race of bees that would make lots of honey, and would not swarm, you could make a mint of money.

450 SWARMS OF BEES IN SIX DIFFERENT APIARIES; REPORTED BY A 12-YEAR-OLD JUVENILE.

I have one swarm of bees, which was given to me by my pa. He has 450 swarms standing on six different places, which he works with the help of a hired boy. I have two brothers and two sisters, and we have to help pa in the summer, making foundation and extracting honey. Pa puts a lot of empty comb into empty bee-hives on the wagon, to carry them to the different places, and fetches back full ones; then we children have to put them in the extractor, and throw out the honey and put it in tin pails. I can not go to school just now, as we are very busy; but I am fond of books. My elder sister is 15 years of age, and is at work putting foundation in honey-boxes. My youngest brother is five years old. He is wasting a good lot of nails, and not much good yet. ELIZABETH HOFFMAN.

Canajoharie, N. Y., June 28, 1885.

Why, Elizabeth, your father is really putting in practice the plan I give in the A B C book. I notice your letter is dated where the *Bee-Keepers' Exchange* used to be published. I am glad to know that bee culture is flourishing to such an extent in the neighborhood of our old friend Nellis.—Never mind the nails your five-year-old brother is wasting. Although his work may not amount to much, driving nails helps to make the boy grow into a man; and if he learns to drive nails skillfully, the time and money won't be wasted. It was only yesterday that I saw two of our grown-up men driving nails, and they started the nail into the board in such a way that it acted like a wedge, and would be almost sure to split the board unless it were very tough and strong wood. I wonder how many boys and girls who read this know just how to set a nail when they commence to drive it. If you do not, get your father or brother to show you.

OUR HOMES.

Give, and it shall be given unto you.—LUKE 6: 38.

IN my talk to you to-day, my friends, I shall lay myself open to the charge of boasting of how good I am, as I have done many times before; but those who are acquainted with me understand what I mean, and will take me as I mean, but it might not sound so well to a stranger; therefore if any one reads this who has just subscribed for GLEANINGS, and does not know my way of teaching, he will please take notice.

Our friend Terry, in teaching us how to raise potatoes, feed horses and cattle, and other like farm operations, keeps telling continually what *he* did; and his statements are so much beyond what farmers usually do, that a great many are tempted to say they do not believe he is truthful. You can visit him, however, if you wish, and can inquire of his neighbors or hired help in regard to the statements he has made, and thereby satisfy yourself. Now, I have not any thing to tell, of how much money I have made, or of how much better I have done than other people; but I do like to tell how I have succeeded, assisted by the teachings of the Bible, in getting along very pleasantly with the world, and in having a very pleasant and joyous life myself.

The words of my text came to my mind this morning while we were discussing celery. We have for the first time succeeded in getting a good crop, some of it ready for market in July, and it is selling quite readily at five cents a stalk. A stalk of the White Plume, and another one of the Crimson Dwarf for contrast, were in a glass while we were talking. One of the family remarked, that the boys all over town were going into celery, and that they would soon run the business all out, for they were getting just as nice stalks as I did, if not nicer. Another member of the family made the remark, "That is just what he wants them to do—and, in fact, is just the way he has worked all his life." I presume that the speaker meant that I always delight in teaching people how to do things, especially young people; and that, when my pupils become more expert than their master, I am always happy. I have been thinking it over, dear friends, and I think it is true. I do not wish you to give me any great credit for it, for it seems an easy thing since I have become a Christian. You know I have no patents on any thing I have ever originated, nor do I want any. Visitors often express surprise, and say they should think that I would need some protection. My reply is, that I am glad to have people copy any thing I make; and if they have facilities for making it cheaper than I can, I ought to be pleased because the world at large will be benefited by lower prices. But some of my intimate friends declare that if I had my improvements patented, and would monopolize the sale of them, I could be worth thousands of dollars more than I am now.

Now, then, friends, remember the caution I gave you in the first paragraph of this talk,

when I say, "I do not want to be worth thousands of dollars more than I am now." I do not make this speech in the presence of strangers, or of those whom I think would not understand me, for it would be met with derision, and may be sarcasm. Some whose eyes fall upon these lines may say, "Mr. Root, if you do not want to be worth any more than you now are, why do you stick and hang for every penny, in the way you do, and persistently keep dunning those who owe you, with such fierceness?" My reply would be, that I try to collect all my just dues, because I believe it is better for the one who owes to pay it, rather than to be excused from paying it; and I have come to this conclusion after years of experience. Yes, I believe it is better for a poor widow to pay her just debts than to be excused from paying them. If widows or other people who have been unfortunate by reason of sickness or death, or other ways, need assistance they should have it, and I believe our townspeople are well aware that I am ready to subscribe liberally; but I think such subscriptions should be a separate matter from the debt. My experience has been, that there is something demoralizing in excusing a person, whether a woman or man, from paying what he justly owes. If a poor family were owing me five dollars, I should insist upon the payment, if there were a reasonable prospect that they could pay it; but if a subscription were started in order that they might have a house built, so as to avoid paying rent, I should enjoy subscribing *ten dollars* for the purpose, or even more, if the case seemed to demand it.

Now, then, in regard to the promise, "Give, and it shall be given unto you." People often urge, that, if we are not protected by a patent, the unscrupulous world will rush right in and steal every thing, may be leaving the inventor penniless. I have heard of such cases, friends, but they have never come under my own experience; that is, I have heard people declare they were the authors of great inventions, but that unscrupulous men of means had robbed them. I have never come across such a case that I know of. On the contrary, my experience has been, that, where a man has been willing to give freely all the knowledge or information he possessed, in some way or other new things were continually opening up to him. In the past two or three years a good many have started in the supply business, making and dealing in bee-hives and fixtures. I have been asked if I was not afraid that so many would go into it that it would be overdone, and our large factory would be standing idle. I have not had any such fear, but, on the contrary, I have enjoyed the work of furnishing these tools and implements for running opposition to us. I have delighted in having the friends visit our factory, and witness the manner in which we make hives, comb foundation, sections, etc. I have been glad in seeing them take measurements, that they might build machinery like our own. One reason why I was glad to see them do it was because it saved heavy freight shipments on such heavy goods as hives and sections. We are now

getting five cents a stalk for our celery, as I have told you. Some extra fine stalks have brought as high as ten cents each. With the prospect that all the boys will go into it another season, the prices will go away down. Never mind; then many people will be able to afford this luxury, who can not enjoy it now. New things have opened up to me all my life, and I have no fear but that they will be opening up still.

A few months ago there was a talk among bee-keepers that Cuba was going to furnish nice honey so cheaply that, if it were permitted to come to the United States free of duty, nice honey would come down to six or seven cents a pound, and our bee-keepers would be compelled to give up the business, and would become bankrupt. Now, I did not look at it that way at all. When it was announced that Cuba could furnish such amounts of honey by means of modern appliances, I felt a thrill of pleasure in thinking that honey would then be able to compete successfully with sugar, and that many poor people could enjoy it every day who could not afford it at present. And while I am about it, I do not believe in duties between countries. I do not know any thing about the political aspects of the matter, but I would have nations as neighborly as individuals, and it seems to me to be a grave mistake when we put up a barrier, in the way of duties and customs. When Jesus spoke the words at the head of our chapter, he had been talking quite a little time to his followers about the evils of jealousy, covetousness, and selfishness. He said, "Love your enemies, and do good to them that hate you." Now, it seems to me that in this matter of duties we are afraid to do good to those who are *friends*, to say nothing of enemies. "If ye do good to them who do good to you, what thank have ye?" And again, "If ye lend to them of whom ye hope to receive, what thank have ye?" What an unpleasant thing it is to be always worrying, for fear somebody will get ahead of us, or for fear somebody will get the better end of the bargain! Only yesterday, I, with a neighbor, bought a carload of water-melons. Some suggested the proper way was to have two divide them—one pick the best melon, then the other pick the best melon, and so on until the carload was exhausted. We managed in that way, but I objected on account of the time it took. The time occupied was in making careful selection, so that the man who was working for me might not let his opponent get the better end of the bargain. I proposed that each should take a melon, as near alike as they could get them, by picking them up about as fast as they could handle them. Very likely the division might not be as exact, if we did it this way. Well, suppose it were not. My neighbor would have a little better half than I did, or I should have a little better half than he did; and providing it were impossible to divide them exactly, I should prefer that he have the better half, and I have do doubt he would prefer that I should have the better half. Then why so much anxiety and so much pains?

Since Nancy has died, I am under the nec-

essity of buying another horse. My first impression that was at all pleasant, in regard to her death, was, that I could probably purchase a horse of somebody who needed the money badly, and thus do him a favor. I like to pay people money; don't you?—especially when I have an opportunity of noticing the good use that is made of it. A few days ago one of our men wanted me to come and see his garden. He was not at home when I chanced to have a spare moment, but I went all over his little place. I looked at all his vegetables, and admired his pretty lawn. I took in at a glance the work his good wife had done also, in making the home pleasant, and the thought that the money that I had paid him for years every Saturday night had been used in this way, gave me a thrill of pleasure. I know he loves his home, and I know he thanks God for it.

Now, in regard to purchasing a horse, somebody suggested that farmers would ask more for their horses if they found I wanted one, because they know I pay liberally. Well, suppose I do give some young hard-working farmer a good price for the horse he has taken great pains to rear and train. What harm will it do? You may say, "Why, friend Root, you will run through all the property you have, if you pay big prices for every thing, just because you like to see people pleased with a big price." To which I reply, I shall not do any thing of the sort. People have prophesied that nobody could ever stand the ways in which I "throw away my money" ever since I became a Christian. But I have not become poor, nor got into debt. It is true, I am paying interest on four or five thousand borrowed money, and I have been paying interest almost all my life. A good deal of the interest goes to my employes, who have left their hard earnings with me, and I enjoy the fun of paying the interest. The book-keeper has positive orders to pay it annually, whether they call for it or not; and if they do not want it, the interest is allowed to compound. Sometimes she argues that there is no need of giving people compound interest, when they would be perfectly satisfied with simple interest. Now, I think that compound interest is all right. When I keep anybody's money, providing I need it, I want to pay them for the use of it, just as much as I would pay a man for the use of a horse when I use the horse every day. Some widows of our town have left their money with me. They get no interest at the bank, and it affords me a real pleasure to make investments so I can afford to take their money and pay them interest for it. Do you say again, that I shall break up if I keep going on in that way? People who do not know me have said so ever since I became a Christian, but they have been mistaken. What does the little text say, at the head of our chapter? I have not quoted it many times, but I have had it in mind all through my talk.

I like to buy queens of the friends in the South; I like to send them orders for "great big lots" of them. And then I like to see postal cards where the book-keeper tells them, "The above amount is subject to your

order whenever you choose to call for it." Then I like, too, to see the friends call for it, and I love to show them how quickly we can speed a check on New York, in answer to these requests. I tell you, friends, it is rare fun to do business—yes, lots of business, when you have the money ready to meet every payment or every demand just as soon as the call comes. No doubt you agree with me; but perhaps you ask, "But, where shall we get this inexhaustible bank account, or balance on the bank, subject to order?" Why, bless your heart, dear brother or sister, read the text, and now read this promise:

But seek ye first the kingdom of God, and his righteousness; and all these things shall be added unto you.—MATT. 6:33.

If all your business arrangements are managed with the sole thought in your mind of doing good to your fellow-men, or, in other words, working for the Savior's glory, God will send the means and whatever else you need. Do you ask if I have ever been cramped for money? Yes, many and many a time, and many and many a time have I prayed, as many of the older friends know, for the means to do that which seemed right, and I believe that God always sent it whenever he could do so, and not have it harm me. A great many of my plans and experiments have been made just to discover something whereby I could keep the friends at work who were faithful, and wanted work; and whenever the motive has been purely to help my fellow-men, and not to get riches and honor for myself, God has sent the means. A good many times I am off the track. Sometimes for days together it seems as if I had strayed away from my Savior, and as if selfish feelings and ends would get uppermost. Then, of course, God could not consistently send me means. The first commandment reads, "Thou shalt not have other gods before me." When I keep in line with that, I am happy and thriving and prosperous. When something else gets before God, and I become selfish, I get to dwelling on narrow and contracted ideas—envy, jealousy, etc. (for I tell you, I know all about these things), then God withholds his promises, and I thank him for so doing.

I am vehement in collecting what is due me, whether I have money in the bank or not; although it is true, that sometimes, when we are in urgent need of money, I mention the fact to the friends who are owing me. I can illustrate the point I wish to make, by a little incident of the morning. Huber was playing near a large basket of beautiful red Astrakhan apples. His mother did not wish him to eat them, for very good reasons; and when I saw him chewing something, I looked; but the apples in the basket were all sound and whole, and he had none in his hand. Again and again I saw him eating, but it was apparently something else besides the apples. Pretty soon I looked over my shoulder, and saw him taking a great bite slyly, after which he crowded the apple away down under the others. For the first time in his life he was caught in the act of deceiving his papa. I fished the apple out of its hiding-place. In his guilty haste he had got hold of one that was rotten,

and had got his mouth full, and some on his nose; but, worst of all, *Satan* was making an entrance to his little heart, and, baby as he is, he showed his guilt in his downcast eyes. His papa gave him a little sermon, adapted to his limited vocabulary and intelligence. Did I take all this pains, and stop my work, and "make such a harangue," as some might have called it, just because of the value of a miserable little snarled specimen of an apple, and half rotten at that? Why, bless you, no. I did not care how many apples he ate, and I would have given him a basket full, or a wagon-load, in an instant, had I been sure they would have contributed to his best good and highest happiness. They were withheld because they were not good for him; and yet one who did not know me, nor understand the circumstances, might have called me little, stingy, and selfish. An hour later a poor specimen of humanity called at the back door, and wanted to know if I would give a poor man a bite of breakfast. I told him that the laws of the State of Ohio made it a crime for him to go around from house to house, making such a request. He at once replied that I was a pretty specimen of a Christian if I could not give a simple breakfast, with such an establishment as I seemed to be master of. I told him that he seemed to be able bodied, and capable of working, and that I would find him work at once, if he would do it, and find him a breakfast too. He glanced up, and then declared that he was not going to work unless he could have some kind of *decent* wages. He preferred to beg, if he could not make his own terms in regard to his services. Do you not see, friends, that the promise at the head of this chapter refers to none of these things?

In all your intercourse with your fellow-men, give good measure. This noon, one of the girls was going to send away some soiled bee-feeders. Christian people ought to give good measure and clean measure. I thought so then and think so still. Give a good clear equivalent for all you receive. Be careful and faithful, and make it your effort to please those whom you serve, and God will, in his turn, give to you good measure, pressed down, and shaken together; for I assure you that the great Father above is not short-handed when he makes good his promises. Try him and see.

I believe I have mentioned before, my experience with a brother-jeweler, while in the jewelry business, at the time of my conversion. We had been having a newspaper controversy, and I had occupied column after column in our county paper, telling the people how good and how smart I was, and how bad and how unfortunate my brother-jeweler was. We paid for these newspaper notices at so much a line, both of us, and threw away our money that way, besides throwing it away in selling things at a less price than they could be afforded. Does a Christian ever get into such jangles? If he does, it seems to me his Christianity is rather weak. Well, after my conversion, customers who wanted to buy articles of some value would go first to one store and then the other. One rainy day, when trade was

dull, somebody wanted a piece of plated ware, worth ten or fifteen dollars; and in order to get me to lower my price, the customer mentioned the fact that Mr. W. had a beautiful one that he had offered so and so. What should I do? What *ought* a Christian to do? I prayed God to show me, and the still small voice said, "Do good to those that hate you." Mr. W. doubtless hated me, because I had tried to injure him, and had tried to get away his custom, and break down his trade in every way I could. I will tell you what I did. I told the friend who wanted the article that it was not unlikely that Mr. W. had got something nicer than I had, and perhaps he had succeeded in getting it cheaper than I had bought my goods, and that I was quite willing she should trade with him, for he was a young man just starting in business, and that I should be glad to see him get along well. The lady looked up in astonishment. I assured her, by a pleasant look, that I really meant it, and by my advice she bought her goods of my neighbor. Do you think I felt bad because I had lost quite a sale? Not at all. God sent into my heart a flood of peace and happiness that was worth more than all the money I ever received in all my life for *any* goods, and I kept it up day after day, until my neighbor finally concluded that true religion was something worth having. And God crowned it all by enabling me to lead this man to the feet of the Savior; and one evening, after we had had a long talk, I had the pleasure of calling upon our pastor to kneel in prayer with the two jewelers of the town, who had, only one year before, been such bitter enemies that it was the talk of the county. Did my business suffer meanwhile? Why, bless you, no. No man's business *ever* suffered because he took a *friendly* interest in the business of his rival, and delighted in turning trade into his hands. I have not kept up that spirit all through my religious life, dear friends; but if I had, I should be a happier man than I am now, and very likely I should have been a richer man in dollars and cents.

Since newspaper controversies are up, I want to say a word here. A great many bee-journals have been started, and those who have started them have no doubt been very anxious to have them a paying investment. Now, it is the most natural thing in the world for an old-established journal to feel that no more journals are needed in the same line of work; and we should have to be almost more than human if we did not at times give way, at least just a little, to a feeling of jealousy. I have had to pray over this a good deal; but I think I am clear over selfish feelings there now, and I am sure I rejoice to see other journals improve, and originate new features that I never thought of. I am not afraid now that I shall not be able to smile and look happy when somebody tells me that he takes some other bee-journal than my own; and it does not hurt me any — at least I think it does not — to have some one make the remark in my presence, that some other bee-journal contains all that is worth reading. Of course, I do not quite agree with him; but then,

you know we have different opinions and "notions," and I don't believe that I want to see any editor of a bee-journal hurt himself by some unwise course. Why, to be sure, I do not. I feel ashamed of myself when I think of the feelings that I have sometimes entertained. If the other journals speak slightly or sneeringly of GLEANINGS, and some of the queer ways in which it is managed, I try not to feel hard toward them for their unkindness, and I almost always succeed. Suppose you read that sixth chapter of Luke, from the 27th verse to the end of the chapter. What a happy world this would be, if all tried to follow that chapter!

A great many who read these pages may be poor in this world's goods, and feel like saying that, if they had a store and plenty of money, such a course would be easy. But, how about those who work hard every day, and can just make both ends meet? How shall they give, when they have not any thing to give? You are mistaken, my friend. You *have* something to give. Everybody has something to give, and does give it. Sometimes they give it grudgingly, I know; but it is given, for all that. If you are working by the day, you give your employer your strength and your good will — at least, you *ought* to give your good will; but I am afraid that some who work for wages do not. If so, they are the sufferers. If your employer is hard and exacting and unreasonable, soften him and Christianize him in the way I did my brother-jeweler.

There seems to be one thing that the laboring-classes, many of them, do not understand. It is this: There is, the world over, a continual demand; and an unsatisfied demand, for faithful service—for cheerful good will. It is not strength we want. Strength of muscle is cheap; there is plenty of it. Strength of muscle we find among the men who shovel gravel on the railroads; but too often we find it without the good will accompanying. I once knew a widow woman with quite a family of children, who would not listen to the advice of her friends, to put her children out. She wanted to keep them all together, and she wanted to provide for them without outside assistance. Her strength was not great, and she tasked it to the uttermost, and then felt she was not equal to the task. What should she do? In a little time the neighborhood discovered that she was faithful to any thing intrusted to her care — more faithful than the ordinary help that could be employed. In whatever she did, whether it paid or not, she was in the habit of insisting on strict fairness and honesty; she could not be induced to be a party to any little petty fraud; and most people who employ hired help for housework know that little petty frauds are common. In other words, she did her work as if she felt that the all-seeing Eye was on her, and it was him she feared, and not man.

One has to be faithful quite a little time, sometimes, before God's promise comes, and it was so in her case. But it did not take long before she became known and appreciated, and she had plenty to do, and at prices

that would enable her to keep her little family all together, educate them, and bring them up in the fear of the Lord. This is what Jesus meant when he said, "Give, and it shall be given to you." You know he told us that, after our duty to God, is our duty to our fellow-men; and it has seemed to me all my life that a great blessing was following every man or woman who delighted in seeing others prosper, and who find no greater pleasure than in studying and devising ways and means by which they might confer favors on their fellow-men.

Now, dear friends, I have talked to you today in regard to the importance of loving your neighbors; for love must be the inspiring motive, or it can not be done. You must have such a love for the friends round about you that what you give will be given through love, or as the outcome of love, and love will often prompt withholding. I refused to let Huber have even one red Astrakhan apple out of a great basket full, because I loved him, and I did not want to see him sick. If you love your neighbor, that love will prompt you just exactly what to do about giving. If you hate him, and are all the while saying sneering things about him, and encourage the family to talk over his weaknesses and inconsistencies, you are away off from the track; and while you are in that attitude and frame of mind, your giving amounts to nothing. You can not put on this Christian spirit. There is only one way, and that way is the straight and narrow path. It begins at the feet of the Savior. You must get clear down low at his feet before this can come natural or easy to you. He told his disciples one day when they were talking the matter over, that anybody who came in any other way was a thief and a robber. See the tenth chapter of John. Now, then, when you are tempted to be selfish, remember God's words, "Give, and it shall be given unto you." And remember, too, that your old friend told you how to manage so you could do it, and be happy over it, no matter where or who you are.

TOBACCO COLUMN.

FROM ONE WHO HAS USED TOBACCO FOR 15 YEARS.

I HAVE been using tobacco for 15 years, but have resolved to not use it again. I have not used any for eight months; and if you think me worthy of a smoker, send it by mail; and if I ever touch it again I will pay you for it, and pay postage too.

J. M. RITTER.

Clapper, Mo.

I have 5 stands of bees, and I need a smoker very much. I smoke a cigar once in a while, but I would quit for a smoker, and promise to pay you for it if I ever smoke again. You say you want a person to say he will never use tobacco any more. I will say that, and stick to it; if I don't, I will register your pay for it.

P. P. CYRUS.

Staley, Ky.

DYSPEPSIA AND TOBACCO.

I like to deal with men who try to abandon the use of tobacco, and therefore I will inclose you one

dollar for GLEANINGS. I have used tobacco for the last five years, and it will be 100 years before I use it again. I see that you will send any man a smoker, who will try to quit the use of tobacco. Please send me one, and I shall be very much obliged for it; and if I use the poisonous stuff again I will pay you for the smoker. Now, my dear friends, all of you who read GLEANINGS, bear this in mind—that I was very sick from the above-named poisonous weed. I had had dyspepsia for nearly fourteen months when I quit the use of tobacco, but I got my perfect health again.

Alabaster, Mich.

WILLIAM KOHN.

I have resolved to quit tobacco, and I think that your gift will help me to quit that ugly habit; and if I ever use tobacco any more, I will at once send you the money for it; but I don't think I shall ever take it up again.

JAMES R. ELMORE.

Horn Lake, Miss.

I have been a reader of GLEANINGS for some time; and as I was a tobacco-user I was induced to quit by reading GLEANINGS. If you think I deserve a smoker, send it; and if ever I use tobacco again I will pay you double the price of the smoker.

Swander's Crossing, O.

JOHN H. DEWLESE.

FRIEND HUBBARD MAKES A FINAL DECISION.

I have often thought I would quit the use of tobacco, and now I have fully made up my mind to do so; and when I commence to use it again I will send you one dollar to pay for the smoker.

Oil City, Wis.

E. HUBBARD.

A MUTUAL AGREEMENT OF TWO NEIGHBORS TO DISCONTINUE THE USE OF TOBACCO.

Myself and one of my neighbors quit using tobacco on Easter Sunday, and I notice in GLEANINGS you give a smoker to those who quit. Now, we want you to send on the smokers, and if we commence using the weed again we will pay for the smokers.

F. P. HISH.

Henton, Ill., June 18, 1885.

I have been keeping bees about two years; and believing smoking to be an adjunct to beekeeping, I contracted the habit; but I found it hurting me, and told my wife I was smoking my last paper, and then I was done. But she doubted it; but seeing your offer strengthened my resolution. Though I can't say for certain, yet I will try; and if I fail to keep my resolution you will get your pay, or smoker will be returned.

S. DANIELS.

Pine Grove, Ohio.

Your generous favor (a bee smoker) came to hand a week ago to-day. It is a "dusky" smoker, I assure you. I never knew what to expect of a smoker before, but I know one thing—that if there were no better one in existence than the old smoker I had, I would have to invent one. But, friend Root, how can you afford to give them away, to hire men to not injure themselves? or is it none of my business? You do not even exact the postage, which was 19 cents on mine, or 17 more than I sent you, as I sent a stamp, thinking my letter would probably necessitate a private reply. I acknowledge I am a thousand times obliged for your generous confidence, and not that I have any desire to break my pledge. I will send you your money if you will tell me how much to send, as I am not willing to take any thing for nothing, and I hope you will find but few bee-men any other way disposed.

Pine Grove, O.

S. DANIELS.

Thank you, friend D.: but I don't want any more money, unless you go back to tobacco again, then you can send me the 70 cts. If I can see the friends giving up tobacco and other bad habits, it will be pay enough, and God will take care of the postage-stamps.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,
EDITOR AND PUBLISHER.
MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clothing Rates, See First Page of Reading Matter.

MEDINA, AUG. 15, 1885.

For with the same measure that ye mete withal it shall be measured to you again.—LUKE 6: 38.

SECOND-QUALITY SECTIONS.

We have in stock about 10,000, just as good as our best in every respect, except that the color is a little off. We will sell these at half price as long as they last.

SPAFFORD'S DRONE-TRAP.

SINCE our article on another page in regard to this little implement was written, our apiarist gives notice that it works like a "charm." The drones are all found outside in a cluster the next morning after it has been used. We can furnish them at the prices given under the illustration.

OUR LAWN-MOWER FOR BEE-KEEPERS.

SO much of a trade has sprung up in these that we are enabled to reduce the price to an even \$6.00, instead of \$6.50. It is, perhaps, the best lawn-mower made, for cutting grass when it gets to be four or five inches high; and during a damp season, like the present one, such a machine is quite desirable.

INTRODUCING NEWLY HATCHED QUEENS, ETC.

ON page 562, friend Ellison gives a report in regard to introducing virgin queens. His success was just about what I should expect it to be with queens newly hatched. With those several days old he did better than I should expect. I believe the general experience has been, that newly hatched queens can be let loose into any hive that has been queenless for 24 hours or more, almost without a failure.

SENSE AND NONSENSE: SIFTING ONE FROM THE OTHER.

OUR good friends of the *Ohio Farmer* pleasantly take GLEANINGS to task for being devoted exclusively to bees and honey, and yet discussing whether arnica is good for sprains or not. If the editor of the *Ohio Farmer* read our whole article through he will notice that I had been speaking of the application of remedies in the shape of medicines for bee-stings. Well, I believe that nearly every old bee-keeper now agrees that the various stuffs that have been so emphatically declared a perfect remedy for stings have all been proved to amount to just nothing at all; and I "sort o'" asked the question, if it was not possible that our remedies for sprains and other like mishaps had as much to do with relieving the suffering, and no more. May be arnica

is good; but, would not water as hot as the patient can bear it be equally good, or possibly better?

MAMMOTH CAVE; FRIEND HOLMES TELLS US SOMETHING ABOUT HOW TO GET THERE.

SINCE my articles on the Mammoth Cave appeared, several have asked the question as to the best way, cost of getting there, etc.; and Mr. Holmes has kindly furnished me the following. If you will write to him where you live, he will probably tell you about what the expense of the trip will be.

Mammoth Cave, Kentucky, is eight miles from Cave City station, which is 195 miles south of Cincinnati, and 85 miles south of Louisville, on the main line of the Louisville & Nashville Railroad, which is one of the great trunk lines from all points north to Florida, and from the North and East to Texas, Mexico, Arizona, and California; and passengers purchasing their tickets over the Louisville & Nashville railroad, by notifying the conductor after leaving Louisville, can stop at Cave City to visit Mammoth Cave, within the limit of their tickets. Parties desiring to visit the cave can make arrangements for so doing by writing to General Passenger Agent, Louisville & Nashville Railroad, Louisville, Ky., or Herman Holmes, Traveling Passenger Agent, Medina, Ohio.

ADVERTISEMENTS THAT DO NOT PAY.

SOMETIMES an advertiser writes that his advertisement has not brought him a single application. Now, although we are very sorry to know that any investment of this kind has not been a paying one, we can in no wise be responsible for the result of such ventures. We sell you the space in our advertising columns, and arrange it so as to make the best appearance possible for each of our advertisers; but the result must rest with the one who gives the order. Perhaps some suggestions in regard to advertising may help you. When the season is comparatively over for untested queens, and everybody wants to sell, a good many will put in an advertisement. At such times it may meet with no response, where the same advertisement, put in in April or May, would flood the advertiser with orders. Again, people are a little slow in sending their money to a new man. A trade in any commodity must be built up by degrees, as a general thing, and it is only human nature to prefer to wait until your card has been standing for some time in the advertising pages, before sending an order. People prefer to get acquainted, as it were; but after they once discover you are prompt, and that you furnish all or more than what you agree to, your advertisements will meet with a quick and bountiful harvest, providing, of course, your prices are fair, and that you come before the public at a season when your goods are in demand.

BEE-KEEPERS WHO MAKE A BUSINESS OF GETTING TRUSTED FOR SUPPLIES WHICH THEY NEVER INTEND TO PAY FOR.

A PAPER on this subject has just been sent us for publication. The writer states that there are men who get trusted one year to A, the next year to B, the next to C, and so on, without ever paying any of their bills; and the proposition is made, that the names of such men be published. I am glad to see that this class of individuals seldom go into bee culture very much; but I do feel that there are enough of them so that the names of one or more of them should be kept constantly before the public, as a warning. Before doing this, however, we will notify the parties, and ask them what they have to say in regard to the course they have pursued. Another thing, I do not believe it is right for supply-deal-

ers to trust men whom they do not know. Insist on having a reference from the station agent, postmaster, or banker, before you fill any man's order without the cash, unless you know something about him; or inclose a postal card to us, and we will tell you, without charge, whom you can trust and whom you can not, as a general thing, for we have records of almost every man who has asked for credit for things pertaining to the bee or honey business. It is a part of the duty of bee-journals, without question, to save their patrons from losses of this kind.

REPORTS ENCOURAGING.

AS the honey season is over with us I will report my success. I started in the spring with three weak swarms and two fair ones; increased to 14 by natural swarming, and have extracted 500 lbs. of white-clover honey; have 100 lbs. yet in the combs, also 50 lbs. section-box honey. Basswood did not yield as much honey as we anticipated, as it did not last over four days. White clover came about June 1st, and lasted until the latter part of July. M. W. SHEPHERD.

Rochester, Ohio, Aug. 5, 1885.

Bees are now doing very well. We are getting 45 cents per pound for comb honey.

GEORGE B. McARTHUR.
Pickering, Mo., Aug. 7, 1885.

I report a very good season. I think I shall get 7500 lbs. from 100 swarms, spring count, mostly blacks. I lost one in wintering.

E. L. SWACKHAMER.
Schenevus, N. Y., Aug. 10, 1885.

Our bees have exceeded our brightest expectations. Some of the hives, which are only wild swarms, have completely filled their hives in a week or two; so if it were not for taking cards of honey and brood to feed in other young hives, and, together with the cutting-out of combs and all, I don't know what we should do with our honey.

A. P. GIBSON.
Church Hill, Jeff. Co., Miss., June 28, 1885.

CONVENTION NOTICES.

The Western N. Y. and Northern Pennsylvania Bee-Keepers' Convention is to be held at Salamanca, N. Y., Sept. 1 and 2d, 1885.

Janestown, N. Y. A. D. JACOB, Sec.

The Mahoning-Valley Bee-Keepers' Association meets at Newton Falls, O., Aug. 20, 1885.

E. W. TURNER, Sec.

The best Queens out.

I will furnish queens from July 1 to September 1 for one dollar; warranted tested, \$2.00; after then the price will be the same as in A. I. Root's list. Queens all bred from an imported mother.

16tfdb **G. F. SMITH,**
Bald Mt., Lackawanna Co., Pa.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL.
See advertisement in another column. 3btfdb

For Sale. Six full colonies of bees in L. hives, on frames of wired foundation, \$6.00 each. They are strong, and have black and hybrid queens. I guarantee safe arrival.

IRA D. ALDERMAN, TAYLOR BRIDGE, SAMPSON CO., N. C.

Red-Clover Queens by Return Mail.

I am now up with my orders, and can send queens by return mail. My queens are almost without an exception purely mated, and my bees worked just thick on red clover from the time it bloomed until the present.

15tfdb **J. T. WILSON,**
NICHOLASVILLE, KY.

IF YOU WANT

A GOOD ONE-PIECE SECTION CHEAP

Send to us. Sample and Price List Free.

SMITH & SMITH, KENTON, HARDIN CO., OHIO
20tfdb

VANDERVORT

COMB FOUNDATION MILLS.

Send for samples and reduced price list.

2tfdb JNO. VANDERVORT, Laceyville, Pa.

Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they want to dispose of, we will insert notices free of charge, as below. We do this because there is hardly value enough to these queens to pay for buying them up and keeping them in stock, and yet it is sometimes quite an accommodation to those who can not afford higher priced ones.

I have 8 or 10 hybrid queens I will sell at 25 cents each. FRANK BAKER, Oakley, Macon Co., Ill.

I have 3 hybrid queens at 35c each, or the 3 for one dollar, by mail. W. A. COMPTON, Lynnville, Tenn.

A few good black and hybrid queens, at 15 and 25 cts. Kanawha-Valley Apiary, St. Albans, W. Va.

I have two black queens for sale at 25c each, or the two for 40 cents.

L. W. GRAY, Troy, Orange Co., Fla.

I have a few good laying hybrid queens for sale, at 50 cents each; blacks, 25 cents.

D. B. FLERY, New Carlisle, O.

I have a few hybrids I would dispose of for 30 cts. each; black queens 20c.

JOHN H. MARTIN, Hartford, Wash. Co., N. Y.

I have four young Italian queens, with clipped wings, that I will sell for 75 cts. each.

MARIA L. DEMING, Watertown, Wash. Co., Ohio.

Hybrid queens, 50 cts. each; black queens, 25 cts. each; from Aug. 1st to Oct. 1st, safe arrival guaranteed. G. D. RADENBUSH, Reading, Berks Co., Pa.

I have a few hybrid queens—some daughters of imported mother, for which I will take 35 cents a piece. W. A. KIRTLAN, Salem, Col. Co., Ohio.

I have about 50 hybrid queens which I will mail for 50c each; 5 for \$2.00. These are '85 queens.

B. T. BLEASDALE, 596 Woodland Ave., Cleveland, O.

Five fine large yellow hybrid queens, two months old, bred from pure Italian mothers, at 40c each, and guarantee safe arrival.

CHAS. McCCLAVE, New London, Ohio.

I still have a few very prolific hybrid queens that I will sell for 50c each. Queens ready to go by first mail. Safe arrival guaranteed.

GEORGE P. KIME, Evansburgh, Coshocton Co., Ohio.

I have 15 or 20 hybrids which I will mail at 50 cents each. Pound of bees, frame of brood, and honey in nucleus hive, \$1.50 more. Two-year-old Italian queens, 75 cts. Bees as above, \$2.00.

CHAS. R. BINGHAM, Edinburg, Portage Co., Ohio.

Speak quick if you want them. Several dark or small Italians, several fine hybrids, and several dark hybrids, at 15, 20, and 30c each, according to merits. No poor ones sold. Sent in Pect cages.

C. WECKESSER, Marshallville, Wayne Co., Ohio.

Bee-Keepers, Attention!

NOW IS THE TIME TO ITALIANIZE CHEAP.

I will sell, during the next 30 days, fine queens, bred from my best strains of Italians and Albinos, at the following very low prices:

1 queen	\$1.00	12 queens.....	\$9.00
6 "	5.00	50 "	35.00
Tested..... \$1.50			

Order now, or you may be too late to secure these low prices. Address **Wm. W. CARY,**

Coleraine, Mass.

151fdb

Successor to Wm. W. Cary & Son.

WANTED.

Orders for Carniolan and Italian Queens and nuclei from best imported mothers. Untested Carniolans, \$1.25; Warranted, \$1.50. Make money orders payable at Greensburg, Ind. Send for Price List to

H. F. SHANNON,

151fdb

SPRING HILL, DECATUR CO., IND.

TRY THE BELLINZONA ITALIANS,



And see for yourself that they are the best. Warranted Queens, bred from mothers imported direct from the mountains of Italy, \$1.00 each; 6 for \$5.00. Special discount on large orders. Satisfaction guaranteed. Send for circular. Orders filled promptly.

CHAS. D. DUVALL,

151fdb

SPENCERVILLE, MONT. CO., MD.

SECTIONS.

Western headquarters for bee-men's supplies. Four-piece sections, and hives of every kind, a specialty. Flory's corner-clamps, etc. Orders for sections and clamps filled in a few hours' notice. Send for sample and prices.

9 20db

Box 172.

M. R. MADARY,
Fresno City, Cal.

SOMETHING NEW.

As I have greatly increased my facilities for manufacturing

Apiary Supplies,

It will be to your advantage to send for price list before purchasing elsewhere. Cash paid for beeswax.

2tfdb

A. B. HOWE.

Council Bluffs, Iowa.

**DADANT'S FOUNDATION FACTORY, WHOLE-
SALE AND RETAIL.** See advertisement in another column.

3btfdb

UNTESTED ITALIAN QUEENS,

Rared from imported and best home-bred queens, 50c each; six for \$5.00. Tested, \$1.50 each.

16d F. S. McLELLAND, NEW BRITTON, BEAVER CO., PA.

LOOK HERE!

To introduce my strain of pure bright Italians, equal to any in the United States, I will offer for August, tested queens, \$1.00 each; extra fine, selected, \$1.50 each; one-frame nucleus, consisting of one extra selected queen, one frame of brood, 1/2 lb. bees, for \$2.00. If you want any bees, send me your address on postal and I will send you sample by return mail. Beeswax or honey taken in exchange.

151fdb

THOMAS HORN,

Box 691, Sherburne, Chen. Co., N. Y.

THE CANADIAN BEE JOURNAL.

WEEKLY, \$1.00 PER YEAR.

D. A. Jones & Co., Publishers, Beeton, Ont., Can.

The only bee journal printed in Canada, and containing much valuable and interesting matter each week from the pens of leading Canadian and United States bee-keepers. Sample copy sent free on receipt of address. Printed on nice toned paper, and in a nice shape for binding, making in one year a volume of 832 pages.

9tfb

PURE ITALIAN QUEENS.

100 READY EVERY 30 DAYS.

Untested at 75 cents; 10 for \$7.00. Tested queens, \$1.50 each. All bred from a selected imported mother. Cells raised in full colonies.

12-16d

D. C. EDMISTON, ADRIAN, LEN. CO., MICH.

SECOND-HAND FOOT-POWER SAWS.

We have, subject to our order, three Barnes foot-power buzzsaws, which we have taken from parties whose business has enlarged so much that they have no further use for them. They are all nearly new, in good order, having all the latest improvements. We will sell them for one-fourth less than the regular retail price; that is, we will sell a \$40.00 saw for \$30.00.

A. I. ROOT, Medina, O.

20 COLONIES ITALIAN BEES AT \$4.50 EACH.

15-18d

M. ISBELL, Norwich, N. Y.

FOR SALE. A 4-horse-power boiler, B. W. Payne & Sons' make. Has been in use about one year. It is as good as new for service. Has crack in base which has been riveted. Will sell boiler complete with pump and heater for \$90.00.

13tfdb

LEE CROSBY, Columbus, Warren Co., Pa.

QUEENS. If you are in a hurry for them, give me an order. Fifty laying now, 90c each; 6 for \$5.00. Tested, \$1.50. Fine stock. Can be sent by return mail in my improved Pect cage.

151fdb

L. HEINE, BELLMORE, QUEENS CO., N. Y.

F. HOLTKE & CO., OFFER

3-FRAME NUCLEI WITH \$1.00 QUEEN FOR ONLY \$2.00!

This offer is good for July and August only. Each purchaser is entitled to 1 doz. of Peter Henderson's choice selected Hyacinths and Tulips—all to be shipped in light boxes. Send money in Registered letter. Satisfaction guaranteed.

11-15-16d

F. HOLTKE & CO.,

Carlstadt, Bergen Co., N. J.

VIBRATING TELEPHONE.

Patented Sept. 1, 1903.



Truly splendid invention. No constant rental fee. No gold, silver or copper. No wires. No batteries. No lines. No cost. The cost of the instrument is less than TWO MONTHS' RENTAL FEE of the ordinary BELL TELEPHONE. THE VIBRATING TELEPHONE is the most PRACTICAL and RELIABLE non-electric telephone yet devised, and is adapted to give satisfaction, economy and safety. Agents in make immense profits, covering lines and all the work they can do. Territory open. Agents in which there are prospects. No previous experience required. Illustrated instructions show all about the instrument. Agents have no agents. Telephone may be ordered direct for private use. Circulars and price list free. Address on this paper.



H. A. JOHNSON, 102 S. Division St., Buffalo, N. Y.

6-17db

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FOR SALE AT \$4.00 EACH.

Ten Colonies of black and hybrid bees, in good condition, all in new Heddon Langstroth hives, well painted. Money may be deposited with the Editor of GLEANINGS until you are satisfied. 17d
Address **R. E. KILBURN, KNOXVILLE, TENN.**

STRAWBERRIES. I will send, postpaid, 12 12 VICK, and 12 Bidwell, for only 50c. If you have any of the above, say so, and I will put in another variety. See page 560, May GLEANINGS.
C. WICKESER,
17-18d Marshallville, Wayne Co., O.

72 Colonies of Bees For Sale.

I will sell the above number of colonies of bees on very reasonable terms. They will have plenty of honey to winter on, and are in good condition otherwise; are in 12-frame hives, with about the same capacity of a 10-frame Simplicity. Correspondence solicited.
H. F. BARGAR,
17-19db Border Plains, Webster Co., Iowa.

A RARE CHANCE.

I will challenge the world to produce their equal. Fifty colonies of my Red-Clover Bees, for sale at \$6.00 each to one address. Each colony contains 40 lbs. of sealed honey, choice breeding queen with each colony. Queen and honey are worth the price asked for the colony; also 100 extra tested Red-Clover Queens for sale at \$2.50 each. Each queen is worth \$5.00 for breeding purposes. Write for particulars.
F. BOONHOWER,
17d Gallupville, Scho. Co., N. Y.

30 STRONG COLONIES OF

Italian Bees For Sale at \$5 Each.

Ten frames, combs all built on wired foundation, and filled with honey and brood. Hives all well painted. Queens raised from imported stock. Will ship during August and September.
16-17d **A. F. PROPER, Portland, Jay Co., Ind.**

W. J. ELLISON, STATEBURG, SUMTER CO., S. C.,

Has a lot of fine Italian queens raised from splendid stock, that he will sell at \$1.00 each; \$9.00 per dozen, or \$85.00 per hundred. Safe arrival guaranteed.
16-17d

DADANT'S FOUNDATION FACTORY, Wholesale and retail. See advertisement in another column, 3b1fd

Names of responsible parties will be inserted in any of the following departments, at a uniform price of 20 cents each insertion, or \$2.00 per year.

\$1.00 Queens.

Names inserted in this department the first time without charge. After, 20c each insertion, or \$2.00 per year.

Those whose names appear below agree to furnish Italian queens for \$1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen be reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delay as may be unavoidable.

Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with *, use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for \$1.00 before July 1st, or after Nov. If wanted sooner, or later, see rates in price list.

- *A. I. Root, Medina, Ohio.
- *H. H. Brown, Light Street, Columbia Co., Pa. 13tf
- *Paul L. Viallon, Bayou Goula, La. 13td
- *S. F. Newman, Norwalk, Huron Co., O. 13td
- *Wm. Ballantine, Sago, Musk. Co., O. 13td
- *D. G. Edmonst, Adrian, Len. Co., Mich. 15td
- *S. G. Wood, Birmingham, Jeff. Co., Ala. 13td
- *S. C. Perry, Portland, Ionia Co., Mich. 15td
- *Jas. O. Facey, Tavistock, Ont., Can. 13td
- *H. J. Hancock, Siloam Springs, Benton Co., Ark. 15td
- *E. T. Lewis, Toledo, Lucas Co., O. 3-1
- *C. C. Vaughn, Columbia, Maury Co., Tenn. 15-19
- S. H. Hutchinson & Son, Claremont, Surry Co., Va. 5-3
- *E. Kretschmer, Coburg, Mont. Co., Iowa. 11td
- *J. L. Hyde, Pomfret Landing, Wind. Co., Ct. 13td
- D. McKenzie, Camp Parapet, Jeff. Parish, La. 13td
- *J. J. Martin, N. Manchester, Wabash Co., Ind. 7-19
- D. A. Pike, Smithsburg, Wash. Co., Md. 7-17
- Cornelius Bros., LaFayetteville, Dutch. Co., N. Y. 7-19
- Peter Brickey, Lawrenceburgh, Anderson Co., 11td Ky.
- S. M. Darrah, Chenoa, McLean Co., Ill. 11-17
- Ira D. Alderman, Taylor's Bridge, Samp. Co., N. C. 13td
- J. W. Winder, Carrollton, New Orleans, La. 13td
- *J. W. Keeran, Bloomington, McLean Co., Ill. 11-21
- *O. H. Townsend, Alamo, Kal. Co., Mich. 13td
- *Elias Cole, Ashley, Delaware Co., O. 13-17
- *Haines Bros., Moons, Fayette Co., O. 13-23
- G. F. Smith, Bald Mount, Lack'a Co., Pa. 15td
- U. E. Cottrell, Burdick, Porter Co., Ind. 13td
- Jos. Byrne, Baton Rouge, Lock Box 5, East Baton Rouge Par., La. 15td
- S. P. Roddy, Mechanicstown, Fred. Co., Md. 15-19
- *Calvin Bryant, Palestine, And. Co., Tex. 15-21
- N. A. Knapp, Rochester, Lorain Co., O. 15
- *J. B. Hains, Bedford, Cuyahoga Co., O. 15-19

Hive Manufacturers.

Who agree to make such hives, and at the prices named, as those described on our circular.

- A. I. Root, Medina, Ohio.
- P. L. Viallon, Bayou Goula, Iberville Par., La. 13td
- C. W. Costeow, Waterboro, York Co., Me. 21-23
- Kennedy & Leahy, Higginsville, Laf. Co., Mo. 17td
- E. T. Lewis, Toledo, Lucas Co., Ohio. 3-1
- H. F. Moeller, cor. 5th st. and Western Ave., Davenport, Ia. 3-1
- E. Kretschmer, Coburg, Montgomery Co., Ia. 17td
- C. P. Bish, Petrolia, Butler Co., Pa. 15-1

FOR SALE. ONE TO FIFTY COLONIES OF BEES.
17-18d **W. S. WARD, Fuller's Station, Albany Co., N. Y.**

HONEY COLUMN.

CITY MARKETS.

MILWAUKEE.—*Honey.*—New crop coming in slowly. Demand is greater than supply. Prospects are, prices will rule considerably higher than last year, on account of light crop. New comb, 1 and 2 lb. sections, quotable at 14½c. Extracted, 5 and 10 gal. kegs, 70c. A. V. BISHOP, Aug. 20, 112 W. Water St., Milwaukee, Wis.

CLEVELAND.—*Honey.*—Market is not very active with us; but choice 1-lb. sections are selling moderately well at 14½c. Old honey sells no better than at last report. We are holding it at 10½c, but none selling. Extracted is not wanted at any price. B. SCHULZ, 206½ E. 23c. A. C. KENDEL, Aug. 20, 1885, 115 Ontario St., Cleveland, O.

CHICAGO.—*Honey.*—The honey market is without special change this week. The receipts are heavier, demand also better, at 15½c per lb. Extracted, without change, 5½c, according to body, flavor, etc. There is no outside demand for honey, it being almost entirely city trade at present. *Beeswar.*, 23c. R. A. BURNETT, Aug. 20, 1885, 161 So. Water St., Chicago, Ill.

CINCINNATI.—*Honey.*—The market is extremely dull for all kinds. Outside of our regular custom from manufacturers, there is hardly any demand for extracted honey, excepting in the small way. Offerings and arrivals are plentiful. Extracted honey brings 4½c on arrival. There is not much new comb honey in the market, which would bring 12½c on arrival for choice. *Beeswar.*, demand keeps pace with arrivals, and brings 20½c on arrival. CHAS. F. MUTH, S. E. Cor. Freeman and Central Avenues, Aug. 20, 1885, Cincinnati, O.

ST. LOUIS.—*Honey.*—There is no change in our honey market since our last report. We look for large receipts and fair prices next month. Extracted honey, 3½c, in bbls., "Southern." New Northern white clover, in cans, 9½c. Old comb honey not salable. Very little new in market. About 16c for white-clover 1-lb. sections. *Beeswar.*, 22½c; stock large. W. T. ANDERSON & Co., Aug. 22, 1885, 104 N. Third St., St. Louis, Mo.

BOSTON.—*Honey.*—We have no change to speak of; we have had some new Vermont white clover in 1-lb. sections, and it is very fine, and there is a large crop. Prices remain 16½c for 1-lb. sections; 14½c for 2 lbs. Little or no sale for extracted. BLAKE & RIPLEY, Aug. 21, 1885, 57 Chatham St., Boston, Mass.

DETROIT.—*Honey.*—There is but little doing yet in the honey market. Quotations are 10½c for 1-lb. sections. A. B. WEED, 407 Woodward Ave., Detroit, Mich. Aug. 22, 1885.

WANTED.—Prices on clover and basswood honey, extracted. Lowest cash price. C. L. HILL, Dennison, Ohio.

FOR SALE.—15 kegs of choice white-clover and basswood honey at 8c. Kegs hold about 180 lbs. L. C. WOODMAN, Grand Rapids, Mich.

FOR SALE.—4000 lbs. very fine quality white extracted honey, in 5, 10, and 17 gallon kegs, at 9c per lb., including kegs where an equal number of the 3 sizes are taken. Single kegs, 5 gal., 10c; 10 gal., 9c; and 17 gal., 8c per lb. here, kegs included. Also 2000 lbs. in 4¼x4¼ sections, the finest lot for 20 years, put up in fancy cases with glass front, for retailing from. Price 15c per lb. here. O. H. TOWNSEND, Alamo, Kal. Co., Mich.

I HAVE SOME FINE POLAND CHINA PIGS

VERY CHEAP. ADDRESS

N. A. KNAPP, Rochester, Lorain Co., O.

DADANT'S FOUNDATION FACTORY, WHOLESALE and RETAIL. See advertisement in another column. 3btfid

EXCHANGE DEPARTMENT.

Notices will be inserted under this head at one-half our usual rates. All ads. intended for this department must not exceed 5 lines, and you must say you want your ad. in this department, or we will not be responsible for any error.

WANTED.—To exchange Chaff and Simplicity hives, wood brood and wide frames, sections in flat, or set up, at A. I. Root's lowest prices, guaranteed as well made, and as good material, for new extracted clover or basswood honey at 9 cts. per lb. 17d J. B. McCORMICK, Fredericksburg, Wayne Co., O.

WANTED.—To exchange bees in L. hive for thoroughbred poultry. 16-17d B. J. PERCELL, Concord, Ky.

WANTED.—In exchange for new varieties of strawberries and raspberries, Plymouth R. Ks. Light Brahmas, Pekin Ducks, new varieties of potatoes, and small-fruit plants, cherry and quince trees. P. SUTTON, Exeter, Luz. Co., Pa. 16-23db

WANTED.—To exchange salt mackerel in 20-lb. pails, for good extracted honey. 17-18d E. E. LING, 11 Silver St., Portland, Maine.

WANTED.—To exchange one No. 2 Zimmermann Evaporator, one Violoncello, one Louis Fountain pump, one 150-egg Incubator, warranted; 100 thoroughbred P. Rock and other fancy poultry, for choice comb or extracted honey, or offers. Circulars free. J. T. FLETCHER, 17 West Monterey, Clarion Co., Pa.

WANTED.—To exchange \$10 press, 3 fonts type, can of ink, 2 type-cases, for 3 or 4 two-frame nuclei with queens. E. F. WILCOX, La Grange, O.

WANTED.—Extracted or comb honey or both, in exchange for a one-horse-power "Shipman" engine, in good order. It has been used but a short time. The fuel used is coal oil. It is suitable for hive-making, running sewing-machines, or a small boat. Address B. SALISBURY & Co., 17d Battle Creek, Mich.

WANTED.—To exchange a full colony of Holy-Land bees in Mitchell frames, 10x12, for one dozen Brown Leghorn chickens—Jewett combs preferred. DAVID LUCAS, Jewett, Ohio.

WANTED.—To exchange hybrid and black queens for dollar or tested Italian queens, or chaff-hive bodies in flat or made up. 17d J. A. BUCKLEW, Clarks, Coshocton Co., O.

WANTED.—Comb or extracted honey, or offers, in exchange for bee-hives, section boxes, bee-hive machinery, foot-power saw-mandrels, or a first-class Incubator; been run two seasons. 17d D. S. HALL, So. Cabot, Vt.

WANTED.—To exchange Cuthbert and Turner raspberry-plants, for good varieties of strawberry-plants, or queens, or offers. 17d W. C. GILLETTE, Le Roy, Genesee Co., N. Y.

TIN POINTS

For Glassing Honey Sections, Machine Cut. Standard size on hand, or any desired shape cut to order from bright tin, and at lowest prices. 17-18d

C. R. ISHAM, Peoria, Wyo. Co., N. Y.

❖ FOR SALE. ❖

50 Colonies of Italian Bees on wired Langstroth frames, in shipping-boxes, \$5.00; or shipped in my double-walled wintering hive, \$7.00 per colony, with stores enough to winter them. Safe arrival-guaranteed. GEO. E. HILTON, 17d Fremont, Newaygo Co., Mich.

HEADQUARTERS FOR TIN POINTS.

Price, 20 cts. per 1000 by express; by mail, 30 cts. W. C. GILLETTE, Le Roy, Genesee Co., N. Y.



Vol. XIII.

SEPT. 1, 1885.

No. 17.

TERMS: \$1.00 PER ANNUM, IN ADVANCE.
2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00.
10 or more, 75 cts. each. Single Number,
10 cts. Additions to clubs may be made
at club rates. Above are all to be sent
to ONE POSTOFFICE.

Established in 1873.

PUBLISHED SEMI-MONTHLY BY

A. I. ROOT, MEDINA, OHIO.

Clubs to different postoffices, NOT LESS
than 10 cts. each. Sent postpaid, in the
U. S. and Canada. To all other coun-
tries of the Universal Postal Union, 18c
per year extra. To all countries NOT of
the U. P. U., 42c per year extra.

NOTES FROM THE BANNER APIARY.

NO. 69.

QUEEN-EXCLUDING HONEY-BOARD.

YES, our only objection to the wooden queen-excluding honey-boards is, that the bees fill the openings. It is possible that this will yet be remedied; if it isn't, we shall be obliged to use the perforated metal. The bees filled the openings very much more this year than last; but why, we can not say.

INTRODUCING VIRGIN QUEENS.

We do not understand why Mr. Doolittle has so much trouble introducing virgin queens. Like yourself, Mr. Editor, we introduce them in large numbers, often as many as twenty per day, and the loss is so slight as to be scarcely worth mentioning. The bees are more apt to accept a virgin queen when they have been queenless 24 hours; but even when introduced the same day that the laying queens are removed, we do not lose more than one in ten. We didn't let them run in at the entrance, as we have met with more losses by that method. The bees are more inclined to attack a queen when they find her where they don't expect to find a queen. A young queen is always found upon the brood-combs, usually upon the brood; hence there is the place to put her. We remove a comb that contains brood, lean it against the hive, place the queen among the bees upon the brood, and then watch the bees. If one or two minutes elapse, and the bees pay no attention to the queen, except it be to caress her or offer her food, we replace the comb. If the bees attack her we smoke them. If they attack her again, we smoke them again. This watch-

ing and smoking is kept up until the bees let her alone, even if it takes ten minutes. Perhaps half a dozen times the present season we have found a nucleus that would not accept a queen after they had been "corrected," even for ten minutes. The queen was then given to some other nucleus, and the "obstreperous" nucleus given a queen-cell. Usually the queens are accepted with no trouble; and when the bees do object, one or two smokings usually induce them to change their opinions. We prefer to introduce virgin queens to giving queen-cells, for the reason that we can see the queen and know that she is perfect.

We have this year been trying the

JONES METHOD OF GETTING QUEEN-CELLS.

And one who has never tried it will be much surprised if this method is given a trial, at the large number of fine queens that will be secured; finer, in our opinion, than those reared under the swarming impulse. Before swarming began, our queen-cells were built in full strong colonies (not by the Jones method, however), and the queens were fine and large. When swarming began, many cells used were built under the swarming impulse, and we remarked several times how inferior were some of the queens compared to those we had reared before swarming began.

Since the swarming season we have been using the Jones method, and are delighted with it. We see to it that some colony has larvae of the right age, with holes cut in the comb to facilitate cell-building; then we shake all the bees from one-half the combs of two or three colonies, in front of the hive where the cells are to be built. We thus get a great mass of bees; the hive is jammed so full that some of them are crowded out of the entrance

most of the time. You may think, friends, that this is an expensive way of getting cells; but, try it once; and when you come to cutting out the cells you will think it is cheap. The queens hatch about a day sooner, and commence laying sooner, besides being large, strong, well-developed queens. The cells that are built under the swarming impulse, in a full colony, before the swarm issues, are fine cells usually; but those that are built after the swarm issues are rather inferior. If nature is allowed her way, of course the inmates of these later-built cells seldom become the mothers of colonies.

THE CANADIAN BEE JOURNAL.

This is proving to be a real, live, practical bee-paper. We have learned quite a number of little "kinks" from it that have been worth more than the cost of the journal. One is, that of

HIVING SWARMS IN A TENT.

When two swarms issue at once, set a wire-cloth or mosquito-netting tent over one of the hives, and let the swarm cluster in the top of the tent. Why wouldn't it be a good plan, in a large apiary, to have three, four, or more, of these tents "standin' round kind o' handy like," all ready to set over hives when the swarms come "thicker and faster"?

THE HEDDON METHOD OF PREVENTING AFTER-SWARMS

Has been a decided success with us for three years; and how it should fail with Mr. Doolittle and his neighbors, or any one, is a puzzle to us.

HIVING SWARMS ON FDN.: DOES IT PAY?

We have been experimenting again this year with empty frames vs. fdn., and the indications are, that fdn. in the brood-nest is a damage, when the swarms hived upon it are given access to a surplus apartment furnished with fdn. Twenty swarms were hived upon fdn., and about 25 others were hived upon empty frames; i. e., empty except "starters" of fdn. one-half inch wide. The swarms were hived alternately as near as it was possible to have them, considering that five more were hived upon empty frames than upon fdn. The swarms hived upon empty frames stored, in the sections, 16 per cent more honey. Their brood-nests were 7 per cent lighter than those given fdn. In the aggregate — i. e., counting both the honey in the sections and in the brood-nest, those furnished with fdn. fell 5 per cent behind. Prof. Cook says bees do not secrete wax unless they need it; but does it necessarily follow that they can not secrete it except at a loss in the amount of honey stored? Our experience says no. 8—W. Z. HUTCHINSON, 70—100.

Rogersville, Genesee Co., Mich., Aug. 21, 1885.

Thanks for the valuable facts from experience you give us, friend H. So you are now master of a hundred colonies! Now, then, will you permit an old friend to suggest that you take immediate steps toward making the hundred colonies keep in good shape until next May? In our own apiary, that is just the point we are beginning to face once more. We have done it pretty well for a year or two; but the question is, Can we keep it up? — It seems to me as though it were destined to be an established fact, that new swarms that have an opportunity of working in sections well supplied with fdn. are better off without fdn. in the brood-frames. Our sales of fdn. have been very much less during the past year than for years past—especially fdn. for brood-combs. But another

thing comes in here: How many of those brood-combs contain more or less drone-comb? I should want all of my brood-combs built on fdn. supported by wires, even if they cost something extra. I do think we ought to be getting our fdn. thinner and lighter, both for brood-combs as well as surplus honey; and we are now able to make a very fair article at 12 square feet to the pound. But this, in my opinion, is still too heavy where full sheets are used in the section boxes. Whenever we have comb honey on the table I am reminded of it, for the fdn. is almost too prominent an object when we are cutting up the honey to spread it on bread and butter. We have had samples of the thinnest made by our different makers, but I believe there is none sent out, as a general thing, running more than 12 square feet to the pound.

CRYSTALLIZED HONEY FROM HONEY-DEW.

HOW IT COMES, AND WHAT PRODUCES IT.

I HAVE to-day sent you by mail three packages containing samples of the so-called crystallized honey-dew of Oregon. No. 1 contains stalks of fireweed (*Epilobium angustifolium*), with the insect that caused or produced the crystals. The insects have been on these stalks since the 20th of June; and when they first appeared they produced clear drops of sweet water; and as it evaporated it produced the crystals as you see them. They are only in small patches, and there is about one stalk in a hundred like the samples, and the country where I got the samples is covered with the fireweed. The bees do not work on the honey-dew, but prefer to get the honey out of the flowers of the fireweed. I think they are wise that they do, for the honey that they get is as white as snow; and when it is extracted it looks as clear as snow.

No. 2 contains cuttings from two white-fir bushes that grow in the street of a small town, and there are about thirty colonies of bees within one-fourth mile of them, and they hum about them all day, but I don't think they would notice them if they had plenty of flowers to work on.

I do not know how long these insects have been on these trees. The first time I saw them was about three weeks ago, but I have noticed the same insects on the red and yellow fir since the 25th of June, but not so plentifully as on the samples; and I think the reason that the samples look so black is because of the dust from the street settling on it, for it looks as clear as water when first produced. The insects all sit close together, with their heads sticking close to the bark of the branches. They don't seem to move, and the juice oozes out on their back in small drops, and falls on the branches below, or on the grass. I saw some drops on some of the bugs as large as a small pinhead.

Now, Mr. Root, I think this is where the crystallized honey-dew came from that Mr. E. S. Brooks sent you in 1883 (see GLEANINGS for 1883, pages 541 and 670).

No. 3 contains cuttings from a willow brush with the insect that produced the honey-dew. These insects are very numerous in the locality where I got them, and the bees hum about the trees and bushes, where the insects are from morning till night, but

there are no flowers for them to work on in this locality, and they store lots of honey from this source, and the honey looks about the color of apple-blossom honey, but doesn't suit nearly as well.

These insects made their appearance about the 20th of June, and they work on several different plants and trees, but seem to prefer the willow.

I have heard a great deal of talk about this honey-dew, but I never had an opportunity to examine it to till this summer, and I have not found any honey-dew yet where there were no insects to produce it; and I don't believe I ever shall; but the people in this country all think it falls the same as natural dew.

Bees have done well so far this season, and are still getting honey from thistle and honey-dew (or bug-juice). D. KAUFFMAN.

Needy, Ore., August 3, 1885.

Many thanks, friend K., for your valuable samples. We will at once forward the insects to Prof. Cook, and may be he can tell us something more about this insect that produces not only the honey-dew, but solid candy that would do credit to a confectioner.

OBSERVATIONS AND CONCLUSIONS ON QUEENS.

Does the Number of Days in the Cell bear any Relation to the Longevity of the Queen?

HATCHING.

I HAVE had queens hatched on the 8th, 10th, 11th, 12th, 14th, 15th, and 16th days from starting of cell. Those early-hatched queens were raised from larvae several days old; the one on the 8th, I judged to be about five or six days old when cell was started over it. It was raised by a prime swarm of black bees which lost their queen at hiving. A swarm that issued Monday, 2 P. M., hived on empty comb and foundation; Tuesday morning, 8:30 A. M., restless; found a dead queen in front of hive, and at once gave them a comb of Italian brood. On Wednesday morning I found a cell well advanced, and on the next Wednesday, 10 A. M., the queen had hatched and destroyed the remaining cells. The following is the approximate duration of life and prolificness of queens compared with the number of days in the cell:

1 queen hatched 8th day;	1 queen lived 9 mths; 1 fairly prolific.
1 " " 10th " "	1 " " 8 " " 1 " "
2 " " 11th " "	2 " " 1 year; 2 " "
3 " " 12th " "	1 " " 1 " " 2 " "
14 " " 14th " "	1 " " 1 mth; 1 " "
" " " 1 " "	1 " " 1 " " 1 " "
" " " 4 " "	1 year; 4 " "
" " " 5 " "	3 " " 3 " "
" " " 6 " "	3 " " 2 extra prolific.
14 queens " 15th " "	1 " " 3 fairly "
" " " 1 " "	2 " " 1 " "
" " " 4 " "	3 " " 1 ex. pro.
20 queens " 16th " "	1 mth; 1 fairly prolific
" " " 1 " "	2 " " 1 " "
" " " 2 " "	6 " " 2 " "
" " " 3 " "	1 year; 2 " "
" " " 5 " "	2 " " 5 " "
" " " 7 " "	3 " " 6 " "
" " " 1 " "	4 " " 1 ex. pro.
" " " 1 " "	5 " " 1 prolific

leaving plenty of brood and eggs at death. One queen hatched 17th day, lived 8 months, not very prolific, but fine honey-gatherer.

SUPERSEDING.

Queens are almost uniformly superseded in the spring, or within 65 days after swarming. In ten years' observation, I have only twice known the superseder of queens raised in the fall. One was the last of September, and the other died in the winter;

the other in October, the mother living until the next spring. This young queen proved to be barren, the only one I ever met with. I kept her for observation, until the 10th of July, but she never laid an egg.

Ten supersedures took place in the spring; five did not swarm that season—one at early swarming time, and four swarmed in the fall.

Four supersedures took place in from 45 to 65 days after swarming. One queen-cell was almost the uniform rule in superseding; only once have I seen this varied from, and that was in the case of early swarming above referred to. The queen was a yearling, whose wings had been badly mutilated in introducing the previous season. This swarm raised three cells, the mother dying about 48 hours before the swarm issued, and leaving the combs full of brood and eggs. The young queen began to lay eight days after swarming.

CONCLUSIONS.

Queens raised in weak nuclei, or in swarms with more combs than they can cover, are shorter lived than those raised in strong nuclei or full swarms. Queens should never be raised in less than three-frame nuclei, and they should be full of bees, and the cell on center combs.

I should prefer four-frame nuclei, full of bees, and the cells in the center space. Superseding cells are mostly near the middle, and a little above the center of the brood-nest. I believe that superseding queens, and those raised under the swarming impulse, are longer lived than forced queens. I have never met with an inferior superseding queen, except the barren one above referred to. Forced queens are those raised to replace queens purposely or accidentally removed. There is very little if any difference in queens raised in crowded nuclei and those raised in strong colonies. I crowd the combs with bees to raise queens. I always prefer a mother one or more years old, to raise queens from. Long-lived queens are, I think, always preferable. Queens may be superseded at swarming time, unknown to the apiarist, but not often, if he be a close observer. Further observation may modify these conclusions. I raise no queens for sale.

E. S. ARWINE, M. D.

Patterson, Texas, July 31, 1885.

Friend A., your observations are extremely interesting and valuable; but I can not see why you make the remark, under the head of superseding, "within 65 days after swarming." Had you said two or three months, we might have hunted up the reason for it. I have observed that more queens are superseded in the spring than at any other date. But where there is a great number of queens superseded in one apiary, I have generally found it accompanied by a sort of demoralized condition of the whole apiary; i. e., at the time when spring dwindling and troubles of that kind are prevalent. I believe it is also true, that where a young queen is reared to assist or take the place of the reigning queen, bees start only one cell; for we often find a young queen in the hive at the same time the old one seems to be doing pretty fairly; and when we find the cell she hatched out of it is usually if not always just a single cell. I have heard of queens living between three and four years; but the case you mention, of a queen that lived and did service up to five years of age, is, I

should think, a very rare occurrence. Are you sure you were not deceived, and that some of the young queens did not take her place part of the time? My experience has been as you state, that these young queens, reared while an old queen is present, are always good ones. Doolittle mentioned the same thing a spell ago, you may remember. In the table you give, we notice that you have no queens that lived to be two years old, except those that were hatched after the twelfth day; and seven that lived to be three years old were all hatched after the sixteenth day. In counting these days, I suppose you mean it was sixteen days after the bees started the queen-cell. In this case it would be pretty certain that they took the egg to commence with. Many of us have long felt that it would be more desirable to have the bees commence with the egg, but we have not had any facts before such as you give.

REPORTS ENCOURAGING.

THE PROCEEDS OF TWO SWARMS OF BEES IN THE HANDS OF AN A B C SCHOLAR.

I BOUGHT two stands of bees last May in Simplicity hives. I looked at them on the 16th, and find 110 lbs. already sealed over—\$20.00 worth here. The bees cost \$17.50. Now, it would be unumerful on my part if I would not do my utmost to winter them properly. I am a novice at the "biz." I sat for hours this summer, and handled the brood-combs, but could not find the queen or queen-cells. I gave them plenty of room and honey-boxes early, so as to size up my two swarms, and they have plenty of bees in them, but they did not swarm at all. At this writing they have made 130 lbs. surplus in boxes over them. There are bees almost by the peck. I put two stories on the strongest hive, as they would hang out for want of room. I thought by "sizing up" the swarms I could winter them better.

I find the A B C book profitable and entertaining, and that so far I have, in my short acquaintance with those in the bee business, found more good, honest, and gentlemanly business men, as a class, than with any other class I have dealt with. I don't believe there are many bad men in legitimate bee business. There is something humanizing and Christianizing in handling the little fellows. Mine have taught me many lessons this summer—lessons in morals, in business, and social life.

Harlan, Iowa, Aug. 24, 1885. W. M. BOMBERGER.

A GOOD BASSWOOD "BOOM;" SOUR HONEY AGAIN, AND HOW IT AFFECTED THE BEES.

We had that basswood boom down here too, for ten days. It was "immense," I tell you. Every little sapling seemed to be loaded down with bloom and bees.

I had a little experience with sour honey in the combs. I placed a frame containing some in the center of a strong colony, and I found the next evening the ground in front of the entrance was literally covered with dead bees. They looked as if robbing had been going on. I was unable to account for it until I saw the report from a correspondent in

GLEANINGS last month. It then "dawned" upon me that the soured honey did it. D. S. SULLIVAN, Ridgeway, N. Y., Aug. 6, 1885.

MORE ABOUT BEE-POISONING.

ALSO SOME QUERIES IN REGARD TO BUILDING UP NUCLEI.

I READ the article written by Mr. Langstroth on bee-poisoning in GLEANINGS of Aug. 15, with a great deal of interest, and also your advice to Mr. Heddon. I can imagine that I see him smile as he reads it, and says to himself, "Not any of that kind of inoculation for me if you please." Now, I object to that style of wholesale inoculation for several reasons—principally on account of the after effect which it has upon the system. If one chooses, for any reason, to go out of the business, it seems an unpleasant thought that, when he happens to meet a farmer apiarian friend and associate, on greeting him with a cordial shake of the hand one must be thrown into a paroxysm of hydrophobia, or, more properly speaking, bee-phobia. He can't be expected to carry a supply of bees around in his coat pocket to inoculate himself as circumstances may require, and he must therefore receive the shock with as good a grace as possible. It seems to me that a poison that produces such results is better out of the system than in it, and I think that it would be better to exercise a little extra caution in the handling of bees, to avoid being stung, even to wearing a veil, when bees are unusually cross.

Your article on building up nuclei in the fall was an interesting one to me, as I am engaged from small beginnings in building up as rapidly as possible, with a view to more extensive operations in the future, and I should like to ask you one or two questions on this subject.

FEEDING NUCLEI SO AS TO BUILD THEM UP TO FULL COLONIES; HOW MUCH SUGAR WILL IT TAKE?

1. How much sugar is best to feed a three-frame nucleus, beginning, say, the middle of August? Would it be well to give them all they will carry down, or is there danger of giving them too much?

2. Would it be safe, at this season of the year, to feed brown sugar, or will some of that which is fed be retained in the combs for winter use, and cause dysentery? It is the opinion of some that brown sugar is preferable; for breeding, to granulated, and it certainly is cheaper. S. A. MERION.

Brooklyn, N. Y., Aug. 22, 1885.

If you are in a locality where little or no fall honey is to be expected (and you must, of course, do the work by feeding), you will probably need 30 or 40 lbs. of sugar to make them a good colony. I would use granulated sugar, so that there will be nothing in the combs but stores suitable for winter consumption. Thirty or forty pounds of sugar will be worth at this date from 7½ to 8 cts. per lb., according to the locality; so you see that, if you have no honey yield, you can, as a rule, make colonies cheaper by sugar feeding than by purchasing them at the usual rates. You will also have the best strain of bees, and perfect combs of the most modern construction. Brown sugar would answer just as well as any thing for building up in the fall, and friend Viallon tells us they will build more comb when fed on brown sugar

than on white; but I hardly think I would risk it, for the reason you mention, that they will be greatly liable to leave some of it remaining in the comb, to be consumed during the winter.

ANOTHER FALSE STATEMENT IN REGARD TO THE HONEY BUSINESS.

A MORE DESPICABLE PIECE OF FALSEHOOD THAN WE HAVE HAD YET.

SEEING in GLEANINGS your column of "False Statements," we inclose you a "sort-o'-rough" one, clipped from the Cincinnati *Enquirer*. Reporters are a little "gassy," it seems, this year; but it looks as if they might open the "safety-valve" in another direction that will not hurt the business of our country so much.

G. W. & S. H. FOLMER.

Independence, Ky., Aug. 24, 1885.

Friend F., we are very much obliged to you for forwarding the slip of paper directly to us; and we agree with you, that it would be desirable to get reporters to turn their wonderful talents for falsifying, in some other direction. We can keep bee-men posted, even if we can do nothing more. Below we give the sensational item which our friend refers to:

HONEY; THE PRESENT SEASON A BAD ONE FOR BEES—A BIG LOCAL CONCERN THAT FEEDS THEIRS ON GLUCOSE.

Meeting a well-known enthusiast on honey-bees, who has a very extensive apiary, Wednesday, an *Enquirer* representative asked how the business of all busybodies were doing this year.

"This has," he replied, "been the worst season I ever knew for them. I don't know exactly why, except that the blossoms and the flowers which they depend on were much shorter lived than usual. The locust-blossoms, from which they extract a great deal of honey, remained on the trees but a short time; and the white clover, from which they gather the most of their stores, has been very scarce. The recent drought hurt them a great deal, and in examining my hives Sunday I found that the inmates would not lay by enough even to keep themselves the coming winter."

"Then that means a scarcity in the honey market?"

"Of the true, natural article! yes."

"Why, is there any thing else?"

"There are adulterations, certainly; but what I more especially refer to is the article sold which bees make from glucose. The honest bee-men for years have been fighting this class of dealers, and I think we are getting them gradually in our clutches."

"They do not exactly adulterate the honey, but they feed their bees on poor glucose, and the article that they make must naturally be very inferior. These men have quite extensive places where they keep bees, and the insects feast themselves on the glucose syrup. They do not like it; but finding nothing else to work in they gradually take to it."

"Is there any such establishment in Cincinnati?"

"Yes. A well-known baker on Central avenue has all the upper floors of his establishment devoted to this style of honey manufacture. The article made is very tame and very tasteless."

You will notice that the above has a shadow of truth about it in the fore part of the communication, and I presume it strikes almost every one of our readers, before he gets through, that the reporter had in mind our good friend C. F. Muth. It seems to me most astonishing, too, when we remember that Mr. Muth is perhaps more fierce against glucose, grape sugar, and the like, than any other bee-keeper in our midst. Perhaps half of the people in Cincinnati know that

he has an apiary on top of his house, and he has a brother in the baking business; but the two are well known to be such good straight staunch men, that it seems strange the reporter should not have known better, ere he published any thing of the sort. Mr. Muth handles more honey than perhaps any other one man in the United States, unless it be some of the friends in California; but the statement that the honey he sells is tasteless, almost every man, woman, and child anywhere about Cincinnati knows to be a falsehood. If it were possible to get this reporter, and take him to friend Muth's establishment, and make him aware of the awful falsehood he has started, it would be the right thing to do. From what I know of friend Muth, I presume he will not do any thing about it; but I wish that somebody who knows something about honey would write to the *Enquirer*, and ask the editor to correct such a slander on one of Cincinnati's best business men. I might mention, also, that this newspaper canard mentions the very street on which friend Muth lives. Mr. M. never feeds his bees any thing—much less, glucose; but during favorable seasons he produces some of the finest crops of honey made by any one in the State, even if his bees are on a house-top, virtually, while the rest of us have them on the ground.

A KIND WORD FOR FRANK BENTON, FROM FRIEND VIALON.

ALSO SOMETHING FROM YOUR HUMBLE SERVANT IN THE SAME LINE.

FRIEND ROOT:—There were a few remarks made in regard to the supposed neglect of Frank Benton in not mailing queens promptly, etc. I am positive that the delay was unavoidable; as I must say, in justice to him, that I rarely dealt with any one more prompt; as, for instance, I wrote to him on the 9th or 10th of June last, and on the 13th of August I received an Italian queen, though I had not sent him the money, and had only expressed the wish, etc. I think great credit is due to him for mailing queens with such good success across the ocean. The queen he sent me was 16 days in reaching us; and though she came sealed up in a registered-package envelope, she was alive and in good condition, and not one of her escort was dead. What kind of candy he uses is hard for me to say, as there was so little left; but nevertheless he succeeds as well as we do, though our queens are only three to five days in the mails. I think friend Benton should be as generous as friend Good, and give the formula of his candy, and thus receive the thanks of all.

Bayou Goula, La., Aug. 17, 1885. P. L. VIALON.

I agree with you, friend V., and I beg pardon for what I said in regard to the delay on our Camiolans. There is one other thing I want to say, for the benefit of friend Benton. In his anxiety to show us that he has succeeded so well in mailing queens across the ocean, he has, to my knowledge, sent a great many queens to other parties as he did you, friend V., before he received the pay. Now, most of the friends who received them, like yourself, felt it a privilege to show him how

promptly they could remit, under such circumstances: but there are some (one or two, any way) who have not paid him even yet. Now even if the queen should be received dead, friend Benton should surely have the privilege of replacing her, or the party who received her should stand at least part of the loss. No man ought to be asked to send queens, and not receive a copper by way of remuneration, even though he should fail once or twice in getting them through alive. You may remember that I have written on this before. In regard to friend Benton's candy, he promised some time ago a full description of how he prepared the candy, and how he prepared the cages. And I think I offered him \$25.00 for such an article; if I did not, I hereby make the offer. Friend Benton is laboring under great disadvantages, and he is laboring, too, for the good of the world. From what I have learned, I am afraid he is not getting very warm support from the brethren at home. Can we not encourage him a little in his undertakings, and give him a lift in the way of some good orders? And if every thing should not turn out to our liking, can we not be a little generous under the circumstances, and show him that we have not forgotten a brother bee-keeper who is working for us, away off in the Old World?

THE OHIO STATE BEE-KEEPERS' ASSOCIATION AT THE STATE FAIR.

TO THE BEE-KEEPERS OF OUR STATE.

AT the present writing I have received no information in regard to where the convention will be held, nor on what special days of the fair. The opening day of the fair is Monday, August 31. Now, then, if it is the wish of the people that I, as president of the association, shall decide upon the time of meeting, I would suggest Thursday and Friday, Sept. 3 and 4. My experience has been, with conventions held during fair time, that the attendance has usually been meager, and the interest rather vacillating, compared with conventions held at other periods. The reason of this, doubtless, is owing to the fact that there is so much going on at fair time, and also because many of our bee-keepers are interested in fine stock and agricultural products in general, which is all very well and proper. But for all that, we ought to be willing to lay aside other things during the hours of the convention, and make it a convention in real earnest. In order to do this, would it not be well to have the length of each session comparatively short? I would suggest that we open the exercises at nine o'clock, Thursday morning, to continue two hours, and devote the time between 11 and 12 to shaking hands, and getting acquainted—a sort of "social," if you choose. This will permit those who have other business on hand to get away at 11 o'clock, if they wish, and yet without interfering with the interest of the meeting by going out and in. Then let us meet in the afternoon, say at 2 o'clock, and continue till 4 o'clock.

My experience has been, that the most in-

teresting meetings during fair time are in the evening, because there is less outside interest to attract attention after dark. Let the evening meeting commence at 7 o'clock, and continue till somebody moves to adjourn, providing it be not kept after 10 o'clock.

The second day, Friday, I would have about the same hours as the day before, omitting the meeting in the evening, if thought best.

In regard to the manner in which the time shall be occupied, I would follow the example of some of our most successful conventions in the State of Michigan, by omitting long essays. Bring as many questions as you like, and also bring all the facts—especially facts not heretofore mentioned, as far as may be. Of course, if arrangements have been made for essays, we shall be most glad to hear them, providing they are not too lengthy, in view of the brief time I have allotted. Of course, if any other arrangements have been made, I will with great pleasure set the above arrangement aside; but I believe it is generally agreed that it is a hard matter to have a successful bee-keepers' convention during fair time. All present seem to feel as if they were off for a playspell or a recess, and they are impatient, somewhat, at any kind of restraint. After what our good friend Mrs. Jennie Culp has said, of course I would extend an earnest invitation to have the ladies present; and I should like to have the juveniles come out, especially all who are interested or working with bees. I shall be most glad of the opportunity of taking them by the hand, and getting acquainted with the juvenile bee-keepers of the State of Ohio; and to make you feel a little more at home, Blue Eyes (whom I presume most of you have heard of) will go with me. May be if we get juveniles enough to come out, we can have an extra session specially for them; and reports or essays from them would always be in order. I shall be very glad indeed to have them bring specimens of their work, in the shape of honey, implements for the apiary, or queen-bees that they have raised, as well as drones and workers. Wouldn't it be a grand thing if Ohio could take the lead in inaugurating a juvenile State bee-keepers' association?

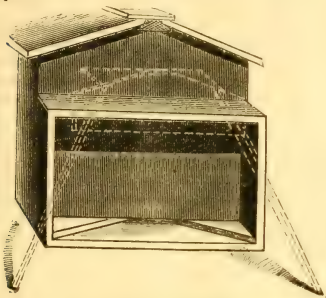
In regard to the place of meeting, I suggest that we have a good-sized and commodious hall, if such a one can be found, on the fair-ground. Much depends upon the place where we meet, and the surroundings. Let us not be backward about a little expense, if that will help the matter. If some of the friends will secure such a hall, if it be not already secured, and have it announced by large plain placards, to be put up in several conspicuous places, at the place of exhibit for honey and bee-supplies at the State fair, I shall be greatly obliged. May be this has been done already; but for fear it has not been attended to, I make these suggestions. Without question, a large body of bee-keepers will be in attendance at the State fair; and the desirable thing is, to get them together and get them acquainted with each other.

SOME EXCELLENT DEVICES OF D. A. MCCORD'S.

BY L. L. LANGSTROTH.

WHEN extracting I always rested the frame upon the portico roof of my hive, brushing off the bees from one side of the comb, and, without lifting, swinging the frame around so as to brush them off from the other side.

My friend Mr. D. A. McCord has devised what he calls McCord's comb-rest, which may be applied to any style of hive. Any one who has practiced holding the dead weight of heavy combs, while brushing off the bees, will appreciate this labor-saving device. With the cut, the inventor gives the following description:



MCCORD'S COMB-REST.

This is the simplest and cheapest device to rest the combs upon while brushing off the bees. It consists of one piece of board about $\frac{3}{4} \times 6 \times 15$ inches; one piece $\frac{3}{4} \times 4 \times \frac{1}{2}$, nailed one or two inches below the top of the 6-inch piece, and two logs $\frac{3}{4} \times 2 \times$ about 21 inches long, nailed as shown in the cut, and it can be made in fifteen minutes. Lean the rest against the front of hive. Set the bottom corner of the frame on the pointed nail, holding the opposite top corner in the left hand; brush the bees off with the manilla brush held in the right hand. It can be used with the upper story on or off.



MCCORD'S MANILLA BRUSH.

This brush should be fastened into the handle with shellac instead of glue; and while using it, it should have the ends dipped in water often enough to keep them soft.* I have used a brush of this kind for two seasons, and brush off the bees without any protection, and sometimes will not be stung in a whole day.†

Mr. McCord also tells how to use the Root chaff hive with reversible frames, so that the bottom frames may be taken out without removing all the top ones.

Take off the upper tin rests and nail a strip to fill the crack. Tack the tin rests on the same sides as the bottom ones, with strips $\frac{1}{2} \times \frac{1}{2}$ nailed under them to support them firmly. The top frames will now hang from front to rear, same as bottom ones. Now shove the reversible wires about half way off at

* Always have a pail of water handy when taking out the combs for extracting—not merely to wet the brush, but to fill an end comb when returned, and save in the height of the honey season, the labor of mussy bees.—L. L. L.

† I can strongly indorse the McCord brush. With its long handle and the manilla put on both sides, and in the right position, it works admirably. When Mr. McCord used a small wisk broom he always wore a bee-hat, and the bees were often enraged. No doubt many were hurt.—L. L. L.

each end, and the frames will hang in the upper story; and in a moment the wires can be pressed in when they are to be put in the lower story.‡

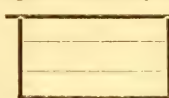
When common frames are used, make the top part single 8 and fasten in rests $\frac{1}{4}$ inch by 2, made of hard wood, with a sharp upper edge for the frames to rest on. The spaces on the sides will not be filled by the bees when idn. and extracting are properly attended to. I have tried hives with this space for a number of years, to my satisfaction. Oxford, O.

D. A. McCord.

In closing this article I will simply say, that the plan given by me four years ago—the same now described by Mr. McCord—may very easily be applied to any of the thousands of Root's chaff hives now in use. To be under the necessity of taking out all of the upper frames when perhaps you want to examine only a single one below, as, for instance, a central one, to see if a young queen has begun to lay, is, in my opinion, an insuperable objection to the present style of this hive, and should never be tolerated by one who can avail himself of the better way.

Friend Root, if I could only get you to alter a single hive in your apiary, you would see the point. I have always tried to make all the improvements in my hives such that, if possible, they could be applied to all hives already in use.

Two years ago I saw at the apiary of our friend Hill, at Mount Healthy, O., what he considered the best plan for wiring frames—only two wires very tight. He said they answered all the purposes of



wires. If so (and he is not the man to say a thing will do when it will not), how much better his plan than the way you have adopted in your reversible

frames! Too much complication is the bane of bee-keeping, and into that all supply-dealers naturally fall, unless they set their faces against it all the time. You are wisely opposed to multiplying loose fixtures, going even to the opposite extreme. Can you not, in this matter of wiring frames, keep nearer to the "simplicity" idea with which you started?

I shall be glad to hear what success attends the reversible frames. I attach little importance to them for securing combs built completely down to the bottom rail of the frame. As soon as a comb becomes a little old, the bees put an extra amount of wax at its lower edge. Cut off about half an inch of this for the wax-extractor, and put in a nice strip of worker comb, and you have what you want. It pays, I think, to do this with all old combs; you can do it if you wire no more than Hill does.

Oxford, O., Aug. 4, 1885. L. L. LANGSTROTH.

I have often thought of a comb-rest, similar to the one our friend McCord describes; but as it requires an additional piece of furniture, to be carried around from hive to hive, I have decided it would be more trouble than value; however, there may be others who think differently.—When using a portico hive, my favorite place has been for resting one corner of the comb on the portico, and swinging it around on the corner.—The manilla brush is quite similar to brushes that have been submitted several times. If I am not mistaken, we have before illustrat-

‡ The bees will not fill in back of the frames when idn. is given, or the extractor is seasonably used.—L. L. L.

§ This is what I recommended four years ago. To make the top story double is worse than wasting room and material, for in winter it tends to keep the cushion damp, acting like a cellar.—L. L. L.

ed a brush with fibers on both sides.—In regard to the plan of hanging combs in the top of the chaff hive parallel with those in the lower story, I confess that it never before occurred to me that the reversing wires would make this an easy matter. It strikes me, however, that the reversing wire would have to be fastened back at the proper distance by a little block, or perhaps a tack, placed at the proper point on the top-bar of the frame; the reversing wire might then be snapped under the head of this tack, or slipped clear over it. It can be worked in the way you suggest; the only question is, will it not be too much machinery? When we are using the upper story of the chaff hive for extracting, or when it is filled with frames of sections, we seldom handle the combs in the lower story very much.—Two horizontal wires, instead of the manner in which we wire frames, have been suggested several times. But diagonal wires add greatly to the strength of the frame. The perpendicular wires are so much shorter than those running from side to side, that they give greater strength for the same size of wire. We have decided that we want all of our combs made from fdn. securely supported by wire of sufficient strength, and placed at the proper points. I hardly think the arrangement you mention would be strong enough to ship frames filled with fdn., which we do quite largely, although it answers all purposes the way friend Hill handles his combs in raising honey and not selling colonies.

FRIEND FOWLS' EXPERIENCE DURING THE PAST SEASON.

A Good Report of some of the New Devices—Reversible Frames, Heddon Cases, Hutchinson Honey-Board, etc.

REVERSIBLE FRAMES.

EDITOR GLEANINGS:—I have 200 reversible frames in use, but I can give only a partial report, because I did not have reversible combs when building up in the spring. But I had them in swarming time; that is, I had reversible frames filled with foundation, and I am so well pleased with them that I would have them for new swarms, even if the cost were ten cents additional, instead of one. Nine or ten days is often enough to reverse the combs, in my opinion. When the combs are filled with brood below and honey above, I reverse them, throwing the new-laid eggs at top, and unsealed honey below. If any is sealed I mash the caps with a knife, sliding it over so as to flatten without slicing them off. This is better than to extract, to get out the sealed honey, as there need be no shaking of combs, and no interruption of the day's work. In nine or ten days more the brood will be sealed at the top. I now reverse so as to bring eggs and larvæ at the top, and capped brood below, when it will hatch, and the queen will refill the comb with eggs. In nine or ten days the combs will be brood in its different stages, when I reverse again, and so on through the season. In short, I reverse often enough so that no bees are allowed to hatch in the upper part of the frames.

CONTRACTION OF THE BROOD-NEST.

In hiving new swarms I usually contract the

brood-nest to four or five S. frames. If more are used, and they are all reversed, the outside frames will be solid with honey, and the central ones solid with brood. I haven't had very good success getting sections filled at the side of the brood. Before they were finished, the queen would be sure to get into them, and I would have to take them out, put division-boards in their place, brush off the bees, and hang them in the top story of some hive that was working in wide frames. This takes up time. Will friend Heddon tell us if he contracts the brood-nest? and if so, will he please tell just how he does it?

HEDDON CASES.

I sent to friend Heddon for a sample case and honey-board, and then had 60 cases and 30 honey-boards made to order. I made my hives myself, to fit the cases and to take the S. frame, which I use. I like the Heddon case very much, and never expect to go back to wide frames again. I find a much smaller per cent of bulged and imperfect sections in those from Heddon cases than those from wide frames, and the work of cleaning for market is much less. Right here, Mr. Editor, it is my opinion you are on the wrong track. You seem sure that the bees will propolize the tops and bottoms worse when the bees have free access to them. Why, friend Root, any one who has seen my crop of honey will bear me out in saying, that all sections from wide frames are propolized *worse*, and a large proportion of them are ten times as bad.

MOORE'S CASES.

I had 20 of the Moore cases in use; and although the sections are cleaner than those from wide frames, they do not compare with those from Heddon cases, because there is no bee-space on top; and every time the enamel is peeled up and replaced, a new line of propolis will be added, exactly as it is on brood frames when mats are used. If I had never used the Heddon case, I should very likely prefer them to any thing else; but in the light of present experience I would have the Heddon case made to fit the Simplicity hive, and have the honey-board with a sink on both sides, and it would be reversible. Do you see?

HEDDON HONEY-BOARDS.

Friend H. deserves at least a vote of thanks for bringing this before the public. I think they will pay for themselves in one season, in the saving of time and labor. I think they would be just as useful if an upper story with wide frames were used. It is very important, however, that the spaces come over the top-bars of the brood-frames. In using division-boards on each side, I got some of them on so as to make continuous passages. I soon found this would not do at all. The bees would fill the spaces, and fill the under side solid with honey. When arranged just right the spaces will be clear, with but little underneath.

HUTCHINSON'S PERFORATED HONEY-BOARDS.

I had eleven of these in use, and I think they would usually keep the queen down if the saw-cuts were as accurate as the one sent as a sample. I presume the man who cut them moved some a trifle to one side while making the perforations. Such boards, with a few holes too large, are a nuisance. The queen gets above, and, unlike the neighbors' pigs when they get into your garden, she is sometimes unable to find the hole she went in at, and, being confined above, takes possession of the sections

when she might not have laid an egg there if wide-spaced boards like Heddon's had been used.

THE SEASON.

The season so far has been very good. I have secured a good crop of fine clover and basswood honey, mostly basswood. New swarms have produced from 25 to 75 lbs. of comb honey, according to size, time of hiving, etc. CHALON FOWLS, 42—90.

Oberlin, 5 O., Aug. 11, 1885.

Thanks, friend F., for the valuable facts you give us. We are glad to hear so good a report of the reversible frames, and also for the Heddon case. I presume I have been on the wrong track, no doubt; but I don't think I am now. I should be very stubborn indeed if I were to reject the abundant evidence given us in regard to the efficiency of the Heddon honey-board in keeping propolis, etc., away from the sections. Besides, we are now selling on the streets of Medina the nicest honey we have ever handled, and it was secured by the Heddon system. The Heddon case as we make it, adapted to the Simplicity hive, I believe secures all the advantages you mention.—I am very sorry indeed if any of our honey-boards have been sent out in the way you mention. I will call particular attention to the matter, and instruct our foreman to have the perforating done by a careful man who understands the consequences of moving the boards even a hair's breadth while over the saw. We presume, of course, the honey-boards you refer to were made by us.

VIRGIN QUEENS, AGAIN.

MORE ABOUT CONFINING QUEENS IN THE CELLS.

ALTHOUGH I have nothing new to offer, giving light on how to introduce virgin queens, more than I gave on page 522, still I wish to say a few words relative to virgin queens, and where to keep them. While I know that, when left to their "own sweet will," virgin queens are constantly on the move, as friend Root speaks of on page 523, still, from the experience I have had, I consider this by no means necessary, as all the virgin queens I have succeeded in introducing at from six to nine days old have proved to be the very best of mothers, and none were allowed a cage larger than a 1½-inch hole bored in a one-inch board. I keep all my virgin queens in an Alley queen-nursery, and consider it just the thing to keep such in. Were I using a lamp nursery, I would cage all the cells so as to save the endless watching necessary when the ordinary plan is used; for an Alley cage allows of many advantages not gotten without it, besides preventing the queens from killing each other, should they feel so disposed. And this brings me to the quotation from the *Canadian Bee Journal*, found on page 532, which I had before read in that paper, which shows that a queen can be confined to the narrow limits of a queen-cell for six days after maturity, and still be just as good as are those which have a full hive to keep up an endless parade in. Friends Jones and Root seem to think this "novel," and not "easily accounted for," while from the editorial on page 539, it is inferred that the queen fed herself on royal jelly. Does not friend Root know that a queen can not turn herself around in a queen-cell? This being

the case, how could she get at the jelly, even if she felt disposed to do so? for the royal jelly is always in the opposite end of the cell from where the queen's head is at the time of hatching. In a few instances I have had queens, after being hatched in the Alley nursery, go back in the cell again, and all such are sure to die there, as they can not subsist on the jelly left, nor can they back out or turn around.

"Well," says some one, "how were the two queens spoken of by friend Jones kept alive?" The bees fed them, of course; and had friend J. looked closely he would have found a little hole through all that coating of wax, through which the queen put out her tongue to be fed, as I have seen them do scores of times. The longer the virgin queen is kept in the cell, the more wax is put on so as to make sure no harm shall befall the inmate from the queen, which is at liberty, biting through it. I have seen such cases several times when I have caged queens to prevent swarming, and left them caged a few days past the time for the young queen to hatch, through an oversight.

It will be remembered by some of the older readers of GLEANINGS, that ten or more years ago I had a queen laying in just three days from the time she hatched from the cell. It happened in this way: A colony lost its queen, casting a swarm with a virgin queen; and while they were hanging on a limb I opened the hive to cut the queen-cells, preparatory to returning them. Upon looking the hive over I found only one cell besides the one the queen hatched from; and as I had the frame having it on in my hands, a beautiful queen emerged from the cell. I at once took said frame (bees and all) with another, and formed a nucleus with them; and in just three days I found the queen laying. I now know how it came about, but did not then, hence it caused some to doubt. The queen was, without doubt, six or seven days past maturity when she crawled out of the cell, the bees having fed her all the while through a hole in the cell, so she was as strong and able to fly as the one that was with the swarm.

In another place in the *C. B. J.* I see friend Jones speaks of rearing queens in such strong colonies that they are so fully developed that they are ready to fly as soon as hatched. This is correct, as far as their being ready to fly; but their being thus ready to fly was because they had been kept in the cell twelve or more hours by the bees after they would naturally have hatched. After much experience and many experiments I think I can safely say that no queen can fly as soon as she emerges from the cell, where she is allowed to hatch, as soon as she is mature.

Now to the keeping of these queens in the cells, should we desire to do so. For the past two years I have been in the habit, to secure the safe hatching of every queen in the Alley nursery, of putting a little honey around the point of each cell, just where the queen would gnaw out, so she could feed herself as soon as she got a hole through (as every queen is thus supplied by the bees when she hatches in a hive, except in cases where five to twenty are allowed to hatch at will in a hive, as is sometimes the case), and in this way these queens are strong as soon as out of the cell. Carrying this plan still further: Fix a block of wood to receive the cell, in such a way that the queen can not get the lid off, but so that she can get a hole through at

one side. Against this side place a bit of sponge saturated with honey, and you have it so that the queens can stay in their cells, and become strong and ready to be fertilized, as did those spoken of in the *Canadian Bee Journal*. G. M. DOOLITTLE.

Borodino, N. Y., Aug., 1885.

Friend D., when I spoke of the royal jelly I suggested it rather off hand, as the only means of sustenance I could then think of. Since you mention it, I have recalled to mind that others have reported seeing queens thrust their tongues out of a hole, to be fed. I should be inclined to think this might account for most of the cases that have been mentioned, where queens took wing at once on emerging from the cell, were it not that we have had quite a number of reports of Holy-Land queens (not only one, but a dozen or more from the same hive), getting out of the cells and taking wing. One friend describing it said the air seemed to be full of queens, and we had almost a similar experience in our own apiary. I feel quite satisfied that young Holy-Lands often fly the moment that they emerge from the queen-cell, and I am not sure but that Italians may under some circumstances. Still, I believe it is true that they may stay in the cell several days, and possibly a week, obtaining food from the workers by thrusting out their tongues.—From the experience I have had with queen-nurseries such as you mention, it seems to me as if they should be called "Dr. Jewell Davis' queen-nursery," if we call them after anybody; but I, with many others of the friends, were led to abandon them years ago. While we are on the subject, here is something further from one of our lady friends:

HOW A YOUNG QUEEN CONFINED IN A CELL WAS FED.

I read your comments on Mr. Jones' article, "Bees confining their queen." You say you wonder they did not starve. I thought this might be the reason: As I was cutting out queen-cells in my apiary, about three weeks ago, one queen had cut a small space in the usual place for opening the cell, quite small, so she just ran her tongue out through, and two bees were feeding her. I held the frame for some time, and then cut the cap off, and she came out a splendid queen. MRS. A. McKECHNIE.

Angus, Ont., Can., August 6, 1885.

A QUEEN-HATCHER.

FRIEND ELLISON TELLS HOW HE MANAGES, AND HOW HE KEEPS QUEENS SEVERAL DAYS AFTER BEING HATCHED.

I SAW in the *Canadian Bee Journal* a notice of a queen-nursery; and not seeing any thing of the kind described in GLEANINGS lately, I thought it would not be out of place to tell your readers what a boon a nursery is to a queen-breeder. I had never used them before this year; and, very strange to say, I was just in the middle of my second year, when I saw D. A. Jones' notice. He does not give the size of the divisions in his. I have made them with two sizes of partitions—one for cells just ready to hatch, or virgin queens, and the other for laying queens. I will describe only the former in this; and if you think well I will give you a description of the other in another letter.

They both work well, and queens can be kept for ten days or two weeks with perfect safety. I made the nursery for virgin queens or queen-cells, by dividing a regular Quinby frame into 66 partitions, each $1\frac{1}{2}$ in. square, just about large enough to accommodate a single cell. One side of the frame is covered with wire cloth, while the other is composed of small doors of wire cloth, one to each partition. They are hung on small wire staples for hinges, opening up and down. When closed they are kept fast with a piece of small wire, about $\frac{3}{4}$ of an inch long, driven in half way at bottom of doors, and bent over them at right angles. Thus fastened, the queens can not get out nor bees in. After the cells are all placed in the nursery (one in each division), hang it in the center of a good strong colony. It is best to have the colony queenless, as the bees will take more care of the hatching queens which are caged. If there are nuclei ready when the cells begin to hatch, the young queens are best introduced at once; if not, the bees in a queenless colony will feed many of them for several days. In order that we may not lose any of them by starvation I prepare small pieces of old comb in this way: With a sharp knife I cut the cells all off on one side, down to their base; the cells on the other side are filled, or partly so, with honey. To do this I use a small teaspoon. The pieces are just large enough to slip into the partitions of the nursery. A little honey will last a long while, as almost every good-natured bee that crawls over the outside will hand in some honey to the caged queens. If one has to be away and is not able to attend to his queen-cells on the days he knows they will hatch, just place them on top of the bits of comb, and when the queens hatch they are safe for several days. Be careful not to have much honey running about, as the queens will get daubed; and as the bees can not get to her to clean her off, she may be lost. In the nursery for laying queens I place bees with each queen to take care of her. The above plan works well; and as many as a hundred or more can be kept for several days in one hive, and then be introduced to nuclei to be fertilized, it surely will be a great help to the queen or her owner.

I have seen queens kept in their cells by the bees, and not allowed to hatch for several days. During the swarming season, in cutting out cells before the after-swarms issue, you are more apt to find them. They are easily distinguished from queens just hatched, as they come out full fledged, ready to fly off with a swarm at first notice, and sometimes several of them will get out with a single after-swarm; and then you have to be smart to keep them from "going west." I have noticed, also, that swarms having more than one young queen are much more apt to go to the woods than those with only one; and a good many other things I have noticed, only I am afraid to write any more, as you may call this a "long letter." W. J. ELLISON.

Stateburg, S. C., Aug., 1885.

Friend E., your arrangement is substantially Dr. Jewell Davis' queen-nursery, which I have recently referred to. It was illustrated in the bee-journals years ago, and a good deal talked about. It works very well during warm summer months; especially when honey is coming in daily; but as soon as you have cool nights or a dearth of honey, all of a sudden your queen-nursery will collapse; at least, that was the experience

of a great many who gave the arrangement a pretty thorough test years ago.

ROBBERS, BREEDING QUEENS FOR QUALITY, ETC.

ROBBERS IN NEWLY UNITED COLONIES.

I UNITED three small colonies of bees a few days since, and saw with pleasure these three families, of about 20,000 each, unite in peace, making one family of 60,000. In twenty minutes thereafter I saw a bee from a fourth colony enter that hive, and it was at once seized upon as a stranger and enemy; that all these bees should have become acquainted, or have had such an individual introduction within that short time, so that a stranger should be recognized on coming among them, I thought was one of the most wonderful things, among the many wonderful things to be learned in studying and observing the operations of bees. If one of the colonies united had been red, another white, and the other blue, and the stranger from the fourth yellow, or each colony had a special perfume, as rose, heliotrope, geranium, etc., I could have at once understood how they could recognize the musk-scented stranger; but I do not believe they were so distinguished.

The question then remains,

HOW DO BEES RECOGNIZE ROBBERS?

I answer, "By their behavior." A bee enters a strange colony just as a robber enters our house, fearful of being seen, trembling, pale, by an unusual way, if possible, avoiding members of the household, and with evident intention of seizing goods and running. I think it is well known that a bee may, during a great flow of honey, by accident, in its haste enter the wrong hive, and then empty its stores, and hasten again to the field, without being disturbed, just because it never knew it was out of its own house, and therefore behaved just as others. I have found this story of the recognition of strangers in a colony one of the most interesting to visitors of my apiary.

MAILING QUEENS.

I have just received in splendid condition a Carniolan queen from Mr. Frank Benton, of Munich, Germany. There were fourteen live bees, and one dead one in the cage after at least fourteen days in the mails.

I do not believe there is any secret about Benton's success in mailing queens, further than the peculiar construction of the cage, and the covering over the food to maintain moisture.

BREEDING QUEENS FOR QUALITY.

For several years I have carefully noted different characteristics of various colonies in my apiary, and noted the races to which these colonies belonged. The first colony I noted was one which swarmed Sept. 6, 1882, and which gathered enough honey that fall to take them over to the next season, 1883, when it started out as one of my strongest colonies, showing a very prolific queen. This colony did not swarm during 1883, but stored 68 lbs. of honey in sections, and have never been seen clustered outside of the hive to this day. I have named that colony "Never Hang Out," and that name means honey. They are Holy-Lands crossed with our native drones. I have another race which in June and July, 1883, threw off five swarms, leav-

ing at last a colony queenless. They are Cypriolians.

I have another stock which I have labeled "Swarmers Stock," and which, in 1883, moved into a new hive with two stories of brood-combs and a frame of brood, and in about two weeks moved out of that again, leaving it full enough of bees to give me a surplus of over 50 lbs. of extracted honey, and about as much more from the new hive into which I placed them. In 1884, and during the present season, they have shown the same qualities—fertility of queen, and industry. Unlike the first-instanced Holy-Lands, these are often found clustering out.

I have noted the most desirable qualities in crosses between the different races decidedly the most marked, rather than in the imported stock of either race.

S. W. MORRISON, M. D.

Oxford, Pa.

I agree with you, friend M., that bees recognize robbers, at least mainly, by their behavior. Your conclusion is just the one I have arrived at after much observation and study. The point you bring out, that the progeny of certain queens have certain peculiarities which they hold *season after season*, is a very interesting one, and it seems to me to point, without question, to the fact that we may greatly improve our bees if we take pains to encourage these desirable traits, and discourage those not so desirable.

A PLEASANT REMINISCENCE.

ALSO A WORD IN FAVOR OF LAWN-MOWERS.

LAST summer, while on board a train I passed by the neatly kept apiary of Mr. Porter, of Lewistown, Ill. The nicely painted hives, arranged in regular rows, equidistant from each other, presented a very pretty picture. The streets and alleys of this miniature city were in blue-grass sod, and kept neatly trimmed by the frequent use of the lawn-mower. I consider a lawn-mower a necessary implement for use in the apiary and every well-ordered home. It is a great boon for the tired mother, when the yard or lawn is clipped short, for the children and visitors prefer it to the house; and when she is through with her work she finds her house in order, for the children have kept house, taught school, or been a visiting out of doors. A hammock and a swing should be provided for the use of little ones. A hammock hung in the shade in an apiary is a great luxury. Here the tired owner can recline, read, and watch the issuing of swarms. The most comfortable one I ever enjoyed was made from a cracker-barrel. Two holes were bored in the end of each stave, and small but stout rope was woven back and forth, using forty feet of rope, twenty for each side. Pieces of carpet were spread over the staves, and a pillow for the use of the head. I'm afraid that Mr. Root will think this savor of idleness; but there are persons to whom rest means one of the greatest economies.

I'm in hopes that the lawn-mower that Mr. Root is now offering to the public runs easily, so that a child can work it. In order to keep a lawn in order. It must be clipped as often as twice a week, during showery weather, and the older members of the family may not have time to spend in this way. If a child runs the mower, it is better to run it fifteen or twenty minutes every day, so the work will not

be so exhaustive. He will love his home much more when he takes an active part in its management. **MRS. L. HARRISON.**

Peoria, Ill., Aug., 1885.

Thanks, my good friend Mrs. H., for what you say about lawn-mowers, and also directions for making home-made hammocks. No doubt they are nice things for invalids, but I do not quite like to see them occupied by well people in the middle of the day.—Our lawn-mower is remarkably easy running—in fact, the most so of any one we have ever got hold of; and I have chosen one that cuts only ten inches wide, for the very reason you mention, that all the mowing that needs to be done may be done by the children.

CARNIOLAN BEES.

HOW MUCH THEY DIFFER FROM OUR NATIVE BEES.

IN the last issue I stated that the bees which accompanied the Carniolan queen from Germany were pitch black, fifteen of which were dead; and their bodies, as well as those of two living yet, were so contracted as to hide the bands of down, and give them a pitch-black appearance. Since then, however, some of this queen's progeny have come to light, and I now state that they are just as friend Benton described them—of a steel gray, with very marked bands of down, and they are truly fine looking. They can be distinguished at a distance from our common blacks. The queen is the best layer I have seen yet, for the short time she has been here. Friend D. A. Jones says, on page 374, Vol. II, that black and hybrid bees are found in France, Germany, Austria, Switzerland, and parts of Italy, and just across the Adriatic Sea, along the Dalmatian coast; and on both sides of the Dalmatian range of mountains there are the finest, and, he believes, the best blacks in the world. Now, Carniola lies northwest of the Adriatic sea, right north of Dalmatia, and perhaps friend Jones had reference to the black bees, called Carniolans. Would friend Jones be kind enough to reply?

Another instance of two queens in one hive. About three weeks ago I looked over my queen record to ascertain which required requeening (I clip all queens' wings in the spring, and then if any are superseded during the summer I can readily tell upon finding an unclipped one). In opening one hive to remove the old queen I found, on the first comb I took out, a young queen, and that a most splendid-looking one too. The frame was replaced, and no attention paid until the other day when my bee-neighbor, Theo. Stellwagner, was taken into my bee-yard to see the fine prolific queen received from Frank Benton. After showing him the queen, I called his attention to this fine superseded queen in the hive standing alongside my imported queen. On the first frame I took out, we found the old clipped queen. Well, this was naturally a surprise. I took out a second frame, and there was the young queen, and laying too. They were both in the hive over three weeks. I removed the old queen. **E. K. BLANCK, M. D.**

Hatfield, Pa., Aug. 6, 1885.

Very likely you are correct, friend B., in thinking that there will be no trouble in distinguishing the Carniolan from our native bees; but, how about the crosses? Can any

one tell whether a queen has met Carniolan drones or native drones? It seems to me rather unlikely. Our young Carniolan bees will be out in about a week, and then we will investigate the matter more thoroughly.

TOADS, FROGS, AND TADPOLES, OR POLLIWOGS.

SOME INTERESTING FACTS IN NATURAL HISTORY.

YOU wish to know about toads, etc. When I was a boy there were shallow ponds of water in some old stone-quarries close to our house, and every spring there were millions of toads raised there if the water did not dry up before their legs grew. This used to happen sometimes, and then there were a great many deaths in a small space. I have observed a great many of their habits. First, the toads' eggs are laid in long lines about as large as a clay pipestem, and they are strung around the pond in every direction until the whole surface is covered. This made the scum you saw on your carp pond; but if you had tried to skim it off you would have found it to be like the rolls our mothers used to spin the yarn, from which our stockings were made; viz., all in a bunch, but all separate pieces, only the difference would be that the rolls were about 2 ft. long, and the strings of eggs are perhaps 200 ft. long, with an egg about every $\frac{1}{4}$ inch. After they hatch they remain in and around the lines for a little time, and then go to the edge of the pond, where they soon grow some very small legs, and soon after lose their tails, and come out of the water small toads, and bid farewell to water, until in time they return to lay their eggs (for the toad is not a water-bird).

Frogs are somewhat different. If you had looked closely you would have seen a large bunch of something that looked like jelly, about as large as your head, and quivering in the water about like a lump of jelly. It is usually attached to some old dry grass or rushes if there are any in the pond; if not, then floating in the water. It is not like the toads' eggs, however, as it is all in a mass, and can't be separated like them; they are also laid some days earlier in the season; and instead of getting out and hopping off as the toads do when they are small, the young frogs remain in the water in the polliwog form until the next season. They are then about 2 inches long, and these were the ones you saw, but they were last year's ones, and not those coming out of the same batch of eggs from which the toads came. **E. M. JOHNSON.**

Mentor, O.

Friend J., with your explanation I can now understand the matter readily. Early in the spring I saw those long threads of eggs, and there were such quantities of them that I thought once about raking them off from the surface of the water and destroying them. In fact, there was a perfect network of these strings all around on the outside of the pond. We also saw the eggs of frogs as you describe them; and so when they hatched out we had toads and frogs mixed up together; and when they got legs, the toad portion of the crowd hopped off and went away to the woods, as I have told you, while the frogs, most of them, stayed in the

pond. But, are you not mistaken, friend J., in saying that the frogs do not get out of the polliwog state until the next season? I should say, that tadpoles all turn into frogs during the spring months of the year.

A REPORT OF THE HONEY SEASON IN THE SOUTH FOR 1884 AND 1885.

ALSO SOMETHING IN REGARD TO DEAD BROOD WHICH AFFECTED TEN DIFFERENT APIARIES.

INCLOSED you will find the condensed report of ten apiaries for 1884, which makes a very fair showing for that year. In the alluvial lands the yield of honey was moderately fair; but in the uplands, owing to the drought, there was scarcely enough made to carry the bees through the winter. Bro. Haniman's apiary is located in the Bayou Macon hills, one mile from the Mississippi swamp. His short crop was the result of so much hill range.

REPORT OF APIARIES FOR 1884.

O. M. Blanton, Greenville, Miss.* Colonies, spring count, 275; fall count, 380; lbs. of honey per col., 75. Blanton & Vaught, Refuge, Miss.† Colonies, spring count, 41; fall count, 80; lbs. honey per col., 110.

F. S. Elder, near Lake Village, Ark. Col's, spring count, 56; fall count, 74; lbs. honey per col., 140.

H. Ramus, Lake View, Ark. Col's, spring count, 43; fall count, 71; lbs. honey per col., 153.

Alfred Saunders, Luna, Ark. Col's, spring count, 40; fall count, 85; lbs. honey per col., 137.

H. A. Haniman, Grand Lake, Ark.‡ Col's, spring count, 105; fall count, 135; lbs. honey per col., 65.

Chas. Kincade, Sterling, Ark. Col's, spring count, 95; fall count, 96; lbs. honey per col., 111.

Victor Johnson, Lake Port, Ark. Col's, spring count, 20; fall count, 40; lbs. honey per col., 250.

Robert J. Adams, Lake Port, Ark. Col's, spring count, 95; fall count, 190; lbs. honey per col., 173.

Wm. McLendon, Lake Village, Ark. Col's, spring count, 90; fall count, 180; lbs. honey per col., 116.

Average per colony, 133 lbs.

This season opened with any thing but flattering prospects. There was no honey gathered after the 25th of August last year, and from that time until April the bees were consuming their stores. Our winter was very severe for this climate, and we had a very cold wet April, and but little honey was gathered until May. I commenced extracting the first of June. The colonies were so weak from short stores, it required a long time for them to build up strong enough for surplus. June and July were moderately fair honey months, with much dry weather. Within the last few days we have had heavy showers, and the prospects for August are very good from swamp woodbine, bonaset, cow-peas, and button-bush. From about 395 colonies, spring count, I have extracted to date only 17,000 lbs. You will find that the Southern crop of honey will be decidedly short.

You seem to think the long legs of my 20-frame one-story hives, shown in the bird's-eye view of my apiary, were intended for the overflow. Nothing of the kind has occurred in this locality for the last forty years, owing to our substantial levees (embankments). I assure you they are for comfort when at work, as they are 30 inches from the bottom of the hive to the ground; which is the proper height for a man of my size. The double stands for

my two-story Simplicity hives are 20 inches from the ground. I prefer them for one hive, as you can stand on either side of them, and will hereafter cut the stands in two.

DEAD BROOD.

Last year, about the first of June one of my neighbors, Mr. S. C. Vaught, discovered dead brood in his apiary. It first commenced with the capped brood, but soon extended to the larvæ, which, in some instances, in both soon became decomposed. On examination I found some of the capped brood with minute holes in the cappings, and the decomposition complete. Some of the pupæ just dead, I found reversed in their cells. There was a very disagreeable odor from the decayed brood, but not such as described in articles on foul brood. Upon inquiry I found ten apiaries, within a radius of 15 miles of me, affected by it; some to the extent of 15 per cent, and most of it confined to the capped brood. Two colonies in my home apiary were affected slightly. The Refuge apiary, with its bright new combs, had it in every colony, but did not reach putrefaction before the bees removed the dead, and filled the cells with honey, and the queen commenced laying as vigorously as ever.

Mr. Vaught's apiary of about 250 colonies was so badly diseased that he determined to let them work out their own salvation, which they did. I uncapped the dead pupæ of some colonies, and the bees soon cleaned the cells.

Just before the discovery of this condition of things the bees gathered a great deal of dark sour honey-dew (aphides'), and I attribute the disease to that cause. This year, as far as I can learn, there is no evidence of the disease. It certainly can not be the forerunner of foul brood, or we should have it this year.

O. M. BLANTON.

Greenville, Miss., Aug. 4, 1885.

Thanks, friend B., for the valuable facts you furnish. I sincerely hope it may so transpire that the trouble you mention with dead brood was caused by the sour honey you speak of; and I think you show excellent good sense in investigating the matter before rushing to the conclusion that you have foul brood in your neighborhood. The fact that it disappeared of itself, I should think, is pretty nearly conclusive evidence. Did anybody ever hear of foul brood disappearing of its own accord? There has never been such a report made, that I know of.

MORE ABOUT BONE-CHARCOAL FOR PURIFYING HONEY.

BEE-PASTURAGE IN NORTH CAROLINA.

IN reference to the note of Chas. H. Grote, page 388, I think the idea is a most valuable one, and that bone-black, or animal charcoal, could be used to change the color of dark honey just as easily as it takes the color from the syrup in sugar-refineries. Enormous quantities of bone-charcoal are used in sugar-refineries for clearing the syrup, and why should it not clear honey? The bone-black is easily procured. No doubt that Chas. F. Mapes, of Front St., New York, who purchases large quantities of spent bone-black, would tell your readers where they could procure the fresh article. All that is to be done is to fill a tall narrow tubular filter with the black, and run the honey through it. An experiment could be made at a very small cost,

*Lost 50 swarms from careless assistants whilst attending Refuge apiary.

†Bought apiary 14th of June, and then transferred from old gums, by Heddon's method.

‡Judge Haniman's apiary can not be classed as swamp location, as it is on a brow of hills.

I wish some of your readers could see the profusion of bee-food going to waste in this beautiful mountain country. Just now we have the locust, basswood, white fringe, white clover, kalmia, azalea, calycanthus, and I can not tell you how many other shrubs and trees in bloom, while the silver-bell, red-bud, cherry, plum, thorn, and a number of others, are past bloom. We have a profusion of flowers all through the summer. The sourwood is especially abundant, and so are the magnolia and tulip trees. Indeed, this country is flowing with honey, and there is room for thousands of hives, and water is everywhere—pure, cool, running streams filled with brook trout, and yet the bee-keepers have nothing but old half-rotten “gums” for the bees. I have been telling the folks here about your Simplicity hives and the honey-boxes, and they see the point; but it needs more enterprise than the natives have been used to, to gather in all these lavish stores. No winter housing wanted here, where the witch-hazel is in bloom in February.

HENRY STEWART.

Webster, N. C., June 4, 1885.

Now, then, are some of our readers so situated that they can test this matter of filtering honey through animal charcoal? Will the honey go through without diluting, or how thick is the sugar syrup when it is passed through the animal charcoal? Who can tell us more about it?

REPORT FROM CALIFORNIA, BY OUR OLD FRIEND GALLUP.

HONEY BY THE TON; ALSO SOMETHING IN REGARD TO IMPORTATION OF QUEENS.

EDITOR OF GLEANINGS:—I have been up into the mountains for a short time with the bee-keepers, and have taken a few notes. One has taken out three tons, one six tons, one eight tons, one fifteen tons, etc. The season has been quite unfavorable. Mr. S. T. Miller has all together on hand now, between sixty and sixty-five tons. He held over about fifty tons last year, and he has some fifteen tons of this year's crop. He has 275 stands of bees, and they are kept in splendid condition. Mr. Miller had quite an experience in getting queens direct from Italy. He ordered from Chas. Bianconcini, I think; the first eight were all dead, and of the next fourteen, five were alive, but two were so feeble that they did not live. They came by express, so the three living queens were quite expensive. Mr. B. can not see why they should arrive safely to you and others east, and not here. He can not or does not understand that they have to be some eight days longer on the road, and have to pass over a hot, arid desert, and then be carried thirty miles over a rough mountain road. The fact was, they consumed all their food, and perished by starvation.

DR. E. GALLUP.

Tustin City, Cal., Aug. 8, 1885.

Thanks, friend G., for your excellent report from California. In regard to the matter of importing queens from Italy, we have had more die from starvation than from any other one cause. It seems to me that friend Bianconcini has no method of getting at the exact number of bees he puts into a cage. The stores would be all right, if the quantity of bees is not too great. I would suggest

that he weigh out his young bees, or, if it would not be too expensive, count them out, and then weigh the quantity of food. To put in very much more food than is needed is not desirable, because it adds so very much more to the express charges. I think our friend Charley will succeed, though, for he is a pretty careful man, as a general thing. You know he has sent us pretty good-sized importations, with the loss of hardly a single queen. I should like to know how your bees from these imported queens compare with the others, in regard to working qualities, in California.

REPORT OF A NUCLEUS IN FLORIDA.

ALSO SOME FACTS ABOUT FLORIDA IN GENERAL.

ICAME here last November and brought with me a one-frame nucleus with a pure Italian queen. My location was fixed before I left home, hence I had not the privilege of looking up a place producing the most honey-plants. My little grove, containing upward of one hundred trees, has about forty which bore some last year, and are bearing more this year. Some have over one hundred oranges on, while others have only a few. These have been budded about four and one-half years. I brought the bees with me to see what they could do in this locality. In a short time after my arrival they commenced gathering honey and pollen, and kept themselves in feed, and reared brood up to Jan. 10, when I thought it time to begin feeding to strengthen them up more rapidly for the orange-bloom. I do not know whether they would have kept themselves in honey during the latter part of January and the fore part of February or not, as it was colder and more cloudy. I shall know more about it next winter.

When the oranges came in bloom they had three frames filled with brood and honey. I had another frame of empty comb, and gave it to them. When the orange-bloom was gone they had increased to ten frames filled with honey and brood, and threw out a good swarm.

Orange-groves are numerous in this section, and bees gather more honey from them than I had thought. I believe a colony will gather as much honey from orange in this locality as from white clover in Ohio.

A few weeks after orange-bloom was gone, saw-palmetto blossomed. This plant grows on flat ground and in low places. In this immediate vicinity it is scattering, and bunches of it only here and there. But it grows in abundance in the “flat wood” which is two and a half miles from me. I suppose my bees do go there, but I wish I were one and a half miles nearer. The bee-man in this locality—near Orlando—will get his surplus honey from orange and saw-palmetto; and I am reliably informed that goldenrod and other wild flowers will furnish honey enough to keep the bees the entire year through. Anyhow, I have confidence enough to want an apiary, and am increasing as fast as I can, with the expectation of supporting myself by my bees until the oranges come into full bearing. I intend to keep only Italians, and am rearing my own queens. One week I lost three out of five; think the bee-martins took them. Some call them “mosquito-hawks,” I think. When bees hang out at the entrance at night, toads eat them. I have

killed as many as four by one hive at one time. I have purchased one Italian colony, and with this and the Italians I already have I rear my queens to Italianize the black colonies, which I buy near here at \$3.25 each.

Bees gather honey and pollen now only in the morning, and I am increasing with sugar. We are having solid hot weather now—thermometer gets into the nineties every day; generally about 95 to 98°. The hottest it has been this summer was 105° in the shade. When I get more bees and more experience in the business in this country, I will send you another report. L. W. GRAY.

Troy, Orange Co., Fla., July 21, 1885.

THE BEE-KEEPERS' PHOTOGRAPH.

A LIST NOW NEARLY COMPLETE, OF THE FRIENDS WHOSE PICTURES APPEAR IN THE PHOTOGRAPH MEDLEY OF THE NEW-ORLEANS BEE-KEEPERS' CONGRESS.

FRIEND ROOT:—I see in GLEANINGS of August 1st a suggestion from Dr. Roberts, in regard to numbering the faces in the N. O. photograph. I think it would be better to begin in the upper left-hand corner as we look at it; that being the way we read, it will come more natural. To aid this numbering and naming, I send the inclosed list. I hope we shall have better success than Dr. R. has had thus far, as he has named only two, and one of those wrongly. It is our friend P. J. Christians, of New Orleans, the cashier of this business, who sits next to friend Viallon, of Bayou Goula, La.

(Top row, beginning at the left.)

- No. 1, Judge W. H. Andrews, McKinney, Texas.
- No. 2, J. G. A. Wallace, Brighton, Ontario.
- No. 3, Dr. D. McKenzie, Carrollton, La.
- No. 4, Ernest R. Root, Medina, Ohio.
- No. 5, Oscar F. Blesloe, Grenada, Miss.
- No. 6, C. M. Bliss, Fox Lake, Wis.
- No. 7, R. Grimsell, Baden, Mo.
- No. 8, George Vincent, 63 Decatur St., New Orleans, La.

(Beginning second row on upper left hand corner.)

- No. 9, O. R. Flournoy, San Antonio, Texas.
- No. 10, Thomas F. Kerr, San Antonio, Texas.
- No. 11, L. Johnson, Walton, Ky.
- No. 12, Dr. D. R. Fox, Jesuit's Bend, La.
- No. 13, Mrs. F. E. Peters, Shelby, Mo.
- No. 14, F. E. Peters, Shelby, Mo.
- No. 15, Mrs. Lucinda Harrison, Peoria, Ill.
- No. 16, Mrs. S. J. T. Moore, Monroe, La.
- No. 17, Mrs. C. M. Bliss, Fox Lake, Wis.
- No. 18, Mrs. Dr. J. Oren, Laporte City, Iowa.
- No. 19, Dr. Jesse Oren, Laporte City, Iowa.
- No. 20, Sylvester Johnson, Irvington, Ind.

(Third, or middle line, beginning on left.)

- No. 21, J. W. Park, Columbia, Texas.
- No. 22, Amos Abrams, Benton, La.
- No. 23, Col. O. M. Blanton, Greenville, Miss.
- No. 24, C. Grinn, Jefferson, Wis.
- No. 25, J. B. Mason, Mechanics Falls, Maine.
- No. 26, W. S. Hart, Hawk's Park, Fla.
- No. 27, H. C. Austin, Austin Springs, Tenn.
- No. 28, C. F. Muth, Cincinnati, Ohio.
- No. 29, Dr. J. W. Hudson, Mayville, S. C.
- No. 30, S. W. Salisbury, Kansas City, Mo.

(Fourth line, left hand.)

- No. 31, J. A. Schudemayer, Black Jack Springs, Texas.
- No. 32, J. W. Winder, Carrollton, La.
- No. 33, Dr. J. P. H. Brown, Augusta, Ga.
- No. 34, Dr. W. F. Roberts, Clinton, La.
- No. 35, S. C. Boylston, Charleston, S. C.
- No. 36, J. A. Green, Dayton, Ill.

(Lower line, left hand.)

- No. 37, J. M. Killough, San Marcos, Texas.
- No. 38, B. F. Carroll, Dresden, Texas.
- No. 39, James Forncrook, Watertown, Wis.
- No. 40, Thomas G. Newton, Chicago, Ill.
- No. 41, A. I. Root, Medina, Ohio.
- No. 42, P. J. Christians, New Orleans, La.
- No. 43, P. L. Viallon, Bayou Goula, La.

From 75 colonies in the spring, I have to report 40 increase and 6.0 lbs. of honey. My bees on gray land failed to store any honey during horsemint bloom, while those on black land, only 13 miles away, did well. Gray land has made a partial fail-

ure in honey throughout this section, so far as I can learn.

7—O. R. FLOURNOY, 75—115.

San Antonio, Tex., Aug. 10, 1885.

Thanks, friend F. I think your plan will be the most practicable one; and if some one will supply the names for the missing numbers, we shall not need to devote any more space to the subject.

PREVENTING AFTER-SWARMS.

MORE ABOUT FRIEND HEDDON'S METHOD.

AFTER reading the last issue of GLEANINGS it seems to me that justice to myself and your readers calls for a few more words from me, upon this interesting and important subject.

In regard to my method as given in a former issue, and discussed by Mr. Doolittle on page 556, I think I never laid it down as infallible, though I do not now recall to mind a single case of failure in my practice. It seems that others are not all meeting with the same success that has crowned my efforts in the direction of preventing after-swarms without even opening a hive.

There are, no doubt, two ways to account for this great variance regarding the reports concerning success with the method. It may be accounted for by a difference of locality; and, again, by difference of manipulation. All systems of manipulation do not give us the same results in all locations. When I read Mr. Doolittle's method of introducing virgin queens, my mind pictured the same disastrous results as are described by Mr. Ellison, should I attempt to apply it in my apiary. I am, however, of the opinion that the cause of failure on the part of the few who have failed, is *mostly* owing to their lack of performing the work in keeping with the spirit of the method. I presume I neglected to be explicit enough in describing it, or forgot something, the same as I forgot to add the extracting of the old combs, in the concluding sentence of my article on modern transferring, on page 562. Several have reported success in "Preventing after-swarms," by simply hiving the prime swarm on the old stand, and removing the old hive to a new location. They claimed the cause of success to rest in the fact that this removal drained the old hive of a larger proportion of its bees, especially the older portion; and so when the young queens came to hatch, the bees would find themselves too few in numbers to swarm, and all supernumerary queens would be destroyed, and thus no after-swarming would take place. The theory is correct, but I found that it did not go far enough to insure success. I added to it letting the old colony remain, practically upon the old stand with the swarm; and just before the queens were ready to hatch, *then* remove the old colony to another stand, and thus deprive it of its flying bees; and then what is left to swarm, except queens? Under such conditions, how could they swarm?

Is it not evident, that those who have failed have not done their work so as to secure these conditions? Have they bees that cast prime swarms, ten to fourteen days before the queens begin to hatch, rather than seven days before? Then they must not move the old colony so soon after prime swarming. But some one says, "No. My colony cast their second swarm the next day after they were removed to their permanent location."

Well, whence did that colony get bees to swarm with? Did you follow our injunctions, to remove the old hive, when nearly all its field-working force was out? Did you remove it carefully, so that as few bees as possible would mark the new location? If so, whence did they get the bees with which to make up a swarm? If your operations were all in keeping with the spirit of this method, then your bees must have different habits from mine. I could not be persuaded to adopt Bro. Doolittle's additions to my method of preventing after-swarms, even if I needed any, for they are not in harmony with the method; for it is one adapted to him who has hundreds of colonies to handle, and does not wish to spend more time in manipulating the old colony than it requires to hive the second swarm beside the old stand; and after both queens are fertile, remove one, and run back the swarm, which is another plan of ours, which settles the question of increase from second swarms, and one which we often practice if the colony is one that we wish to rear queens from.

This puts me in mind of one instance this season, where one of our best colonies that had cast a prime swarm nine days previously, cast four after-swarms in as many days, all of which we hived on fdn. in hives, clustering about the old stand. As soon as all of the five queens were fertile, we shipped four of them and ran all the swarms back into the old colony, extracted all honey stored in the newly drawn combs, and gave their combs, eggs, and larvae to prime swarms just issuing. Not a particle of bee labor or time was lost. We spent less time in the whole operation, than I have seen spent in trying to "clip all the cells but one," and then failing to prevent after-swarms at that.

Our climates and localities, as well as our ideas of dispatch, differ widely. I could no more adopt Mr. Doolittle's box and comb manipulation than I could his hive. I do not think any one will tolerate any added complication, when once he "gets the hang" of just how to use my method in its letter and spirit.

JAMES HEDDON.

Dowagiac, Mich.

FALSE STATEMENTS IN REGARD TO THE HONEY BUSINESS OF OUR COUNTRY.

As a protection to our bee-keeping population, we propose in this department to publish the names of newspapers that persist in publishing false statements in regard to the purity of honey which we as bee-keepers put on the market.

WE extract the following from the *Evening News*, of Saginaw, Mich. It was evidently written by our old friend L. C. Whiting, of East Saginaw, Mich.

BEEES AND GLUCOSE.

I saw an extract in your paper from the *Chicago News*, headed, "What Bees are Coming to." They took it originally from the *Detroit Free Press*. It was written in the style of Peck's bad boy, and was evidently a burlesque, or something worse, on the part of the author. For instance, the writer said the bees were being fed glucose; and to prove it pointed out a barrel labeled grape sugar. Now, grape sugar, if dissolved, would turn back into sugar again before he had time to sell it, and would not be the color of honey, and of course be unsalable. To a bee-keeper the case if there was any truth in it at all stands like this: Bees as a rule raise brood only when honey is coming in. There is a time in the summer, after white clover has gone to seed, that there are no flowers to yield honey for several weeks. Bee-keepers have learned that it pays to feed back poor honey during this

dearth of blossoms, to keep the queen laying to raise workers to gather the honey that comes later. This is probably what the *Detroit* bee-keeper was doing. The life of a working bee in the honey season is very short, from sixty to ninety days. If the flow of honey ceases for thirty days nearly half the bees in the hive will have died from old age. Those unacquainted with the short life of the worker-bee think some disease has killed them. Bee-keepers feel, after such a winter as the last, that they have about enough to contend with without being advertised as selling glucose for honey. We some time will have a law that will compel persons to sell things for what they are, or forfeit their goods; and the sooner the better. L. C. W.

It is indeed true, that bee-keepers have had enough to contend with without this miserable sensational reporter's story that friend W. refers to; and it seems to me that the times are ripe for a law that will make it a very severe offense to sell any thing for something else. Feeding bees something that is not honey, with the purpose of selling it for honey, if such a thing has been done, should most assuredly come under the above head.

LETTER FROM J. H. MARTIN.

He tells how his Automatic Extractor works.

ALSO SOMETHING ABOUT VIRGIN QUEENS.

YOU call for a report from some one using the Stanley automatic honey-extractor. I have used one two years, and not only extracted one ton, but several, with it, and the following is my report. As to the working qualities of the machine in my yard: Last season, owing to the short crop, our work with it was limited to about one ton; but this season basswood came down in such a shower that nearly three tons have been run through the machine, and we are not through yet.

The machine I ordered of Mr. Stanley was made to fit my size of frame, 11x14. It was among the first of his make; and by the side of my old two-frame machine it was a genuine "Jumbo." It takes four frames, and, of course, it does not start off so quickly nor stop so easily as the light two-frame machine, and on that account it appears clumsy to manage; but after you get used to the change, this clumsiness disappears. As I have done nearly all of my extracting myself, my method is as follows:

I go out into the yard with my cart, upon which I have three hive-bodies. I go from one hive to another till I fill all of the hives, say 30 frames of honey. I then wheel it right into the building, close to the extractor, and extract the load. After uncapping four frames I insert them in the extractor, and, whirling the baskets into position, I give the crank a few vigorous turns, and then leave the machine to run down. It will run with enough force to throw out honey until you uncap another frame (I have sometimes uncapped two frames). I then reverse the combs and set it to whirling the other way, and uncapp more combs; and by the time the machine stops I have four more combs ready to extract.

The beauty of the machine, and the great claim for it, is the reversing motion, and it works to a charm. You don't have to touch a sticky comb until both sides are extracted; and if you do your own work, the machine is not only automatic in reversing, but in extracting; and I think Bro. Heddon

would find it so without slipping the crank out of gear. The gearing on this machine could be fixed in a short time so as to be so used.

The only fault I find with my machine is in the comb-baskets. As my frame is deeper than the L. frame, the wire cloth would bulge out and break the combs. I put in several stays, and it now works all right. I also had to get stronger chains to strengthen the baskets where they are attached to them. I wrote to friend Stanley about this weakness in the machine, and his reply was that I must turn slower. My reply was, that unless he could make his machine strong enough to be run like lightning it wouldn't suit me and a great many other bee-keepers. I understand the machines have been made stronger, and somewhat improved, this season.

I have not run it to test its capacity. With the aid of a ten-year-old boy I have run out 1000 lbs. in about 7 hours. That was as fast as I could bring it in and uncap it. To run it up to its full capacity would require two men in the yard and two or three to uncap, and one at the crank.

I will sum up my opinion of the automatic honey-extractor, by saying that I wouldn't exchange it for the old two-frame machine again. I have a two-frame machine in my Granville apiary; and if I run that apiary for extracted honey I shall surely put in a Stanley machine; or if I should go to Florida or California or Cuba, and run for extracted honey, I would order a Stanley. I will also say, that I am in no way interested in Mr. Stanley's business. I met the gentleman at the N. E. N. Y. Association, and found him a very agreeable young man, and I have no doubt any one dealing with him will be fairly treated.

INTRODUCING VIRGIN QUEENS.

The question of introducing virgin queens is of great interest to me, and I have been in hopes a reliable method could be discovered, or one that is sure every time. I succeeded several times by mixing bees in Doolittle's cage, and thought I had got it sure, when the bees went back on me and killed several fine queens. At the same time three fertile queens were balled in a cage, and one killed. I attributed this to the age of the bees used. I formed several cages of bees for nuclei while I was extracting, and I shook bees from the top story. I seemed to get bees all of the same age, while bees from the brood-frames give you bees of all ages, and are better for forming nuclei, and will accept a queen nearly every time.

I have accidentally hit upon a plan that is quite sure, or has been with me so far. I formed a nucleus with a mixed lot of bees, and gave them a virgin queen. In a few hours I happened to look into the cage, and the bees were balling the queen on the bottom of the cage. I was somewhat provoked at the bees; and seeing a pail of water standing close by I thought a bath would do the bees good. So I dipped the cage, bees and all, into the water. They looked very much as though they had been out in a wet rain, and I set them up in the sun to dry. When dry I put them in the hive, and the queen was accepted. Now, Bro. Israel, next time you climb the mountain and roll your bees around, get a stream of water handy, and roll them through that, and you have the whole process.

Virgin queens can be quite successfully introduced with Alley's cage, and I should think Boomhower's cage would also answer admirably; but they are not sure every time. As far as my experi-

ence goes, a virgin queen will be accepted when she gnaws herself out of a cell, even if the cell has been in the hive but a short time. If an artificial cell could be constructed so the queen can gnaw herself out, or with an adjustable cap to open gradually, I think the queen would be accepted every time.

JOHN H. MARTIN.

Hartford, N. Y., Aug. 5, 1885.

Friend M., we are much obliged to you for your report, and are glad to hear of your having such a good yield of honey. Some one has before suggested the plan of starting the extractor under high motion, and letting it stop when it got ready. I believe it was friend Heddon. Although I examined one of the automatic extractors, I can not now remember whether it was geared or not; but from what experience I have had with four-frame extractors, my opinion is they do not need gearing—simply put a crank on top of the shaft.—In regard to the bath remedy as a cure for balling queens, it does not always work. I have had stubborn nuclei that would pitch into the queen again before they got hardly dry; although, as a rule, "sousing" them in water generally diverts their attention from the queen. My experience in caging virgin queens was, that the cage was a nuisance, and we got along much better without any cage. Why should they be caged, if they are entirely unmolested without caging? If you mean virgin queens five or six days old, you will perhaps want a cage; but as a rule you will waste more time, both of your own and that of the bees, than your old virgin queens are worth; that is, that was my conclusion.—I am sorry to discourage anybody; but the artificial-queen-cell business has been pretty thoroughly tested. One friend went so far as to advertise them for sale several years ago; but, like all other plans for introducing, sometimes it worked and then again it didn't; and the "didn'ts" came so often that it spoiled it all.

GRADING HONEY BEFORE YOU TAKE IT TO MARKET.

ALSO SOME GENERAL REMARKS IN REGARD TO GRADING FARM PRODUCE.

A FEW days ago we purchased a lot of Red-Astrakhan apples of a farmer. When we take honey around town on our wagon, we take along fruits and vegetables also, more or less, and the Red Astrakhans were put on the wagon. We decided that we should have to have 15 cts. per peck, to cover cost, and expense of selling. The sales were slow, because customers were deterred from buying by bruised, specked, and gnarly specimens of fruit scattered all through. Finally the boys stopped the wagon, and picked out all the poor fruit, and put it into a basket by itself, showing customers nothing but fair, smooth apples. The load was closed out at 20 cts. a peck, in a very short time. Now, how many bad ones were left, do you suppose? In grading they got about one peck of bad ones to five pecks of perfect fruit, and they sold this bad peck for 10 cts. Do you see the point? Six pecks of apples brought \$1.10 after they were graded. Before grading they offered six pecks of apples for 90 cents,

and could not get it; therefore it would have been good economy to have poured the bad apples out to the pigs, rather than to have damaged and hindered the sale of the nice ones by having them sprinkled through with bad ones. I was a little surprised when they told me about it; so I asked my wife one day, when I saw her paring apples,—

"Sue, how much more would you give to have apples that were all smooth, without any specks, rotten spots, or 'crookedness' about them—that is, providing you wanted them to cut up for pies or sauce?"

She replied promptly,—

"Why, I would give twice as much."

"Oh, no! you couldn't give so much as that, could you? Are you not putting it a little too strongly?"

"I am not putting it too strongly at all. Where a woman's time is valuable, and where she likes to have things nice, she can well afford to give *double the money* to get nice fair fruit."

Of course, there are people who will want the culls at a moderate price, and such people should have the privilege of having them. Now, we have kept on grading our fruit ever since that day, and I have been surprised again by hearing the boys say they could not get rid of their culls so long as they had nice fruit on the wagon. There was hardly anybody who wanted the culls at any price. While relating the little story to a friend, he mentioned the following:

He wanted to buy some corn, and a farmer drove past his house with a load that he wanted 20 cts. for; but there were so many nubbins and so much soft corn mixed in with it that he decided not to buy it. Shortly afterward he drove to Akron (five miles), and met the same farmer who was trying to sell his corn. He drove from place to place, but the soft corn and the nubbins frightened his customers, and he could not get a purchaser. He finally sold it to my friend (who offered him 20 cts. in the morning), for only 15 cents per bushel. They transferred it from one wagon to the other; but while so doing they sorted it, throwing the bad ears to the back end of the wagon. After they got it sorted a man drove past who wanted to buy corn, and he offered 25 cts. a bushel for the best. Now, then, how many bushels of bad corn were in the back end of the wagon? I can not remember the figures, but the result was something like this: There were 17 bushels of good corn and 3 bushels of culls. The farmer sold the 20 bushels for \$3.00. My friend who bought it was offered \$4.25 for the sound corn after he got it sorted, and had the culls to take home besides. I have mentioned this little story a great many times, and every one verifies it.

Our friend Terry, of potato-book fame, has several thousand bushels of potatoes, not very large, on account of the devastating blight that has swept over almost all of Northern Ohio. I suggested that he sort them, and sell the small ones for what he could get, and the nice ones at a good price. He was afraid it would not work with the potatoes. When I got home I asked my wife if she would give double the money for good-sized potatoes in good shape, free from

specks, crookedness, etc. She replied at once, that she would gladly. Now, I do not know how far it pays to carry this principle. Perhaps my wife is a little over particular, in her readiness to pay a good price for fruits and vegetables that are just to her liking; but I know there are lots of women-folks who are just like her.

Now let us apply it to honey. Some of your honey is real nice; a good deal of it is pretty fair, and some is crooked and unsightly; but it is not well to put it together, with the hope that the purchaser won't mind the bad if there is not very much of it, and your chance of getting a fancy price for your fancy honey is killed by a few bad sections mixed in, just as we drove customers away from our apples, and just as the farmer made his whole load of corn unsalable by three bushels of soft nubbins mixed in. It is the same thing with liquid honey. There will probably be some time in the season when honey that comes in is just splendid. Put this by itself; when the yield changes, put this by itself, and put the poorest by itself. When you have a customer who will give any thing like a fair price for the poorest quality, let it go. You will always have the most trouble in selling the culls—at least, we do on our market wagon. People have different tastes and notions. There are good many nowadays in every community who take pleasure in using and in showing to their friends, God's finest gifts to men. They like gilt-edge butter, and they enjoy paying a gilt-edge price for it. It stimulates and encourages the producer, and raises farming, fruit-growing, etc., to one of the fine arts.

A great many purchasers spoil God's finest gifts by bungling, slipshod habits in handling the products, after nature has furnished them free from blemish. Almost every farmer who brings us apples puts them in bags. Very often the bags have had flour or meal in them; they are dumped into the wagon, then shaken into a basket. By the time we get them they have to be sorted and wiped. Wiping takes off the bloom, which everybody loves to see. Another thing: A good many apple-growers shake their apples off on to the ground, and perhaps set their boots on them when they are picking them up. A few days ago a young man brought us some beautiful Red-Astrakhan apples that were picked from the trees, and laid carefully into baskets. I gave him some new baskets in place of his, so that we were enabled to handle the apples without touching them or tumbling them from one measure to another. The man who raised them is president of one of our horticultural societies. Did it pay him to pick the apples? They brought fully 20 c. more than if he had shaken them off, and everybody was pleased all around. If we could have all the fall apples brought us picked in this way, and set into our market wagon, nicely graded by the picker, wouldn't it be fun to sell fruit? The careful housewife could then fill the fruit-stand with these great smooth beauties, with the bloom on every apple that it possessed when it ripened on the tree. Now, dear friends, does this little chapter strike home to you in your work?

HEADS OF GRAIN FROM DIFFERENT FIELDS.

ANOTHER WAY TO CLEAN THE CLARK SMOKER.

THAT smoker I bought of you was in good health; but in the run of time it became badly affected with the quinsy; and, as the Frenchman said by the bellows horse, it went "ove heze, ove heze." I gave temporary relief by pushing and pulling a square hickory stick through its windpipe, turning the stick at the same time; but the glue-like soot gathered and settled on and on, until its lungs ceased to work. I then took it to my work-bench and performed a surgical operation by making a hole slanting through in the bottom-board of the bellows, in the direction of the back end of the air-tube, leading from the bellows to the fire-pot. I then wound a strip of thin new domestic around my hickory stick, and swabbed and cleaned out this badly choked tube precisely as a deer-killer cleans out his rifle. I first opened the tube with my brace and a small bit, by carefully working the bit in at each end of the tube. This hole in the bellows-board I stopped with a little ball of soft beeswax. I made it airtight in half a minute, and can open it in that length of time.

I will suggest that you make the tube leading from the bellows to the fire pot *straight*, and solder one end near the nose of the fire-pot, and let the other extend back, accessible through the hole in the bottom-board. A bellows constructed in this way can be cleaned by a child, with a swab and pan of water, I think, in a few minutes.

Quitman, Texas.

J. M. STEDMAN.

Thanks, friend S. Your suggestion in regard to stopping the hole with a piece of soft beeswax, is ingenious and valuable. This would make the opening absolutely airtight, quickly done and almost no expense.—You can not make a straight tube send the blast straight out at the nozzle of the smoker. On this account I think we had better have it bent; but we may adopt your plan of leaving an opening for swabbing out.

YELLOW-JESSAMINE HONEY NOT INJURIOUS WHEN FULLY RIPE, BUT THE UNSEALED POISONOUS.

This honey is considered poisonous if eaten before it is ripe, or capped over, among our people in Eastern North Carolina, where it abounds all over the woods in large quantities. Of this I can remember being told ever since I was quite small; and I have heard of many instances where people were made sick and partially *blind* from eating unripe jessamine honey; and in consequence of this, all our box hive men are very careful to save no honey in the comb, except that capped—all uncapped being squeezed out, which is supposed to work off all impurities in it, after standing a few days, on being squeezed out.

COTTON AS A HONEY-PLANT.

Bees are just booming on the cotton honey-flow at this time. Italians, albinos, and Syrians, all go for it with a vim this year. You know I reported last season the extra yield of cotton honey from one hybrid colony of Syrians, while Italians were lying idle; but it is not so this year. The albinos seem to like it better than either Italians or Syrians, though all of them are filling every available nook and corner with it.

CATCHING AND CAGING QUEENS.

If bee-keepers would use a queen-catcher, something like the "Klinitz" catcher, there would be fewer queens lost by cramping and otherwise injuring them by picking them up by the wings. I have used, ever since July, 1874, a queen-catcher made of wire cloth, of which the Klinitz catcher is a very near imitation, and I have yet to hurt the first queen with them. I caught a queen last March with mine, when she got so cold she could hardly crawl in the cage, in going up the catcher, and I blowing warm smoke on her, too, all the while.

3—ABBOTT L. SWINSON, 44—65.

Goldsboro, N. C., Aug. 10, 1885.

QUEENS GETTING UNDER THE ALIGHTING-BOARD.

My success with bees is moderate. I have increased this season more than 100 per cent, and all my colonies seem to be in good condition. Some of the new swarms are giving more honey than some of the old ones. My bees are a common kind—neither Italians, nor yet the little black bee. I had one or two interesting experiences with swarms, in one of which a swarm came out two or three times and then went back. Suspecting something wrong I looked closely under the alighting-board and found a fine queen imprisoned in a spider's web, with a dozen or fifteen bees trying to release her. I released her for them and the next day got a fine swarm.

One day a fine swarm came out and was successfully hived; but I noticed on the table in front of the new hive two collections of bees. In one of these I found a dead queen, in another a queen just able to crawl about. A shower coming up I went indoors; and when I came back the second queen was dead, and the swarm gone—back, I think, to the hive from which they came. Could it be that, in fighting, both queens were mortally wounded?

EIGHT-FRAME HIVES.

I am still holding on to the Simplicity hive with wired frames, but can't, for the life of me, see the use of a bottom hive with ten frames. Putting in two broad frames with section boxes—one to right and one to left—shows that seven or eight frames are ample for brood. Why not, then, have the lower hive made for only seven or eight frames, instead of for these, and two broad frames for honey? It is certainly much more convenient to get honey from the second story than the first. Why not, then, force the bees to store all their surplus above, where it is much more accessible? I know that some think that bees store more at the sides than above; but my very limited experience is the other way. I know, too, the oft-iterated argument about the vast number of Simplicity hives in use. But that is not a valid argument, if a hive with fewer frames would do better. Some of my bees do so much better than others, I think I shall guillotine some of my queens as soon as I believe I can successfully introduce others. But, by the way, is it not troublesome to introduce queens while there is a second story on? I suppose a frame has to be lifted out of its place in order to watch the deportment of the bees to her, else she disappears from view between two frames.

One criticism—on you and some of your correspondents—about the use of words. Starch, for instance, is sometimes recommended, as, for instance, in putting in fdn. Is it the dry article, or the prepared that is meant?

J. A. GOREE, 8—18.

Tuscaloosa, Ala., Aug. 13, 1885.

Friend G., it was because of so many mishaps in the way of queens getting under the bottom-boards, etc., that I decided that our bottom-boards must be cleated clear round, so that there should be no space for queens, spiders, or toads, to get under the bottom-board; and I therefore concluded to make the bottom and cover of the Simplicity hive exactly alike. Where there is a hole under the hive, a new swarm is almost sure to make a mistake and crawl *under* the hive instead of *into* it. I have never heard of both queens being injured during a combat between the two queens. If your hive holds only seven or eight frames, and you should want to use it for a winter hive, you could not have chaff division-boards at each outside, and still have combs enough to winter the bees on. If you think the number of Simplicity hives already in use is not a valid argument, suppose you try a few eight-frame hives in your own apiary, and see how long it will be before you conclude it does make a difference, where you have to work them interchangeably with others. I do not believe that a hive with fewer frames will do better.—Yes, it is somewhat troublesome to introduce a queen to a hive that has an upper story on. Upper stories, however, I believe, are now considered to be the lesser of the evils attendant on having the whole number of combs spread out horizontally.—I do not think your criticism about the use of words well taken. If you look at the word "starch" in Webster, you will find two different references. One is the dry article, and another is the verb signifying the act of applying the starch. There is no name that I know of for the starch in a semi-liquid form, as it is prepared in laundries; and, of course, this is what we refer to when we mention using it as a lubricant.

SOUR HONEY, AND WHAT TO DO WITH IT.

I see in Aug. 1st GLEANINGS, page 531, that G. E. Hughes asks what to do with sour honey. As there are others who may have sour honey, and do not know what to do with it, I will give you the plan I used last year. I took a wash-kettle, filled it about three-fourths full of honey, put this in a large pot of water, put fire under, and boiled the water. As long as any scum rises to top of honey, skim it off and put in a vessel to cool; keep the scum, and you will get some honey at bottom. You can keep honey this way any length of time, and do what you please with it. Now, who will give us a cheap way to filter honey—I. e., to make dark honey clear?

New Orleans, La., Aug. 4, 1885. D. M'KENZIE.

It occurred to me, friend M., to suggest scalding the honey to remove the sourness, as the women-folks do with syrups, preserves, etc.; but scalding, so far as my experience goes, is so apt to give the honey a sort of cooked taste that I thought I would about as soon have it sour as to have it scalded.

HONEY "TURNING TO SUGAR."

It is an old saying, that "misery loves company." That is why I have felt less *lonesome* since reading friend Gordon's report in Aug. 1st GLEANINGS. With us, however, it is not alone the white-sumac honey that has turned to sugar, but all the honey made this season from maple bloom till the present

time. In a nucleus hive I found two pieces of combs as large as my hand, and these were partly filled with candied honey. These combs were built within a week, so our latest honey is as bad as the earliest. We have had a very dry season till lately, and I did think that accounted for the sugar; but for the past three weeks we have had abundance of rain; still the sugar nuisance continues. I attempted to extract some of the honey, but gave up the job in disgust. By revolving the combs at a very high speed I could get about 10 lbs. from a story containing 40 lbs. of honey. It was very dark honey while the sugar remaining in the cells was almost as white as granulated sugar. I think the bees have concluded the sugar business is a fraud, for they are carrying out the sugar and dumping it in front of the hives.

W. E. SKINNER.

Warrenton, Va., Aug. 17, 1885.

No doubt your candied honey looks like sugar, friend S.; and after you have thrown out the liquid portion by means of the extractor you have something very much like loaf sugar, which is made in the same way, by draining, or throwing out by centrifugal force, the liquid portion; but it is not sugar, strictly, after all; or, at least, not what we understand by the term sugar. All solid sugar taken out of honey is *grape* sugar, not cane, if I am not mistaken.

TURNING THE TABLES.

I take GLEANINGS and the *American Bee Journal*. With your perforated zinc to put between brood-chamber and top hive I can raise bees and honey by the mile, without any winter fixings; but with all these advantages you can put me in Blasted Hopes. I see honey is very low, and still falling—no sale, no difference how attractive it may be. I see a great howl put up against adulterating honey with syrup. I see no way to sell our honey but to adulterate the common syrup with it. That would be turning the tables "clean over." No use sending you a report. I have honey enough—more than I can sell.

Columbia, Tex., Aug. 14, 1885.

J. W. PARK.

Well, friend P., your remedy is a novel one indeed—producing honey so cheaply that, instead of adulterating honey with sugar, unprincipled venders will go to adulterating syrup with honey. Wouldn't that be a novel undertaking? And now who knows but our troubles may end in this way? I presume there is more than one article in their line where nice honey is cheaper than some grades of syrup.

THE PROGENY OF A CARNIOLAN QUEEN CROSSED WITH AN ITALIAN DRONE.

I have a Carniolan queen that came from Geo. H. Knickerbocker, of New York. She was mated with a yellow drone, and has so far given good results,—considering the season, which has been a poor one—there being no white-clover honey. The bees work early and late; and when it rains, if not too hard. They have made the whitest combs and the best-looking honey, and a good deal more of it, than the average of bees. They are very hardy, and as gentle as Italians. The old saying is, that "one swallow does not make a summer," but I shall have enough next year to give them a better test.

There is one point of which I wish to speak; and that is, they stick to the boxes better in cold nights, and I consider that one of the best. After taking

off the early honey they went right into the new sections and went to drawing out the fdn., even before there was any honey to put into them. They are now working on buckwheat, which is looking well. Basswood was never better, but we haven't enough of it, the most being cut off and sold to make Crandall's toys, and there are about 250 colonies of bees in this range.

I have bees in three different places, besides my home yard. I find that they do much better where there are only a few bees in a place. I can get more honey in my house apiary than I can in chaff hives.

C. J. HAIGHT.

Rush, Pa., Aug. 10, 1885.

ABOUT THAT AUTOMATIC HONEY-EXTRACTOR.

Charles West, on page 535 of GLEANINGS, wants some "late information about the practicability of the Stanley automatic extractor." I purchased a four-frame machine of that make last spring; have extracted about 400 lbs., and can say that it is practically reversible. The working parts are strong, well put together, and it looks as if it ought to last a long time. It is certainly a great saving of time and labor to be able to reverse the combs almost instantaneously, instead of lifting out one at a time and putting them back to get the honey out of the other side. While I am delighted with the working parts, I am not so well pleased with the can. It is made of good material, and well put together, but it has a flat bottom and no honey-gate, but a tin tube instead, and I do not consider any extractor complete that will always have two or three gallons of honey standing in it unless you tip it to one side so it can get out. Bro. Stanley, in the cut of his extractor, shows a honey-gate; but when he makes it he prefers a tin tube and cork. I do not find fault with Bro. Stanley for making his extractor with a tin tube instead of a honey-gate, but I was not a little disappointed to find *mine* that way; and I think when goods differ in any way from a cut that is intended to describe them, such differences ought to be made known by private letter or otherwise.

4—A. R. NISBET, 100—143.

Dobyville, Clark Co., Ark.

To be sure, friend S. ought to make some explanation, if he sends out a machine that does not agree with his illustration, and he certainly can afford a good honey-gate for the price he gets for them. As we never heard this complaint before, may be yours was finished in that way by mistake, and that the others are as they should be.

DOES CONTRACTING THE BROOD-NEST INCREASE THE TENDENCY TO SWARM?

Do not wide frames for sections, or the contracting of the brood-nest, in any way cause bees to swarm more than they otherwise would? If a swarm of bees has plenty of room all the season through, would they swarm at all? In introducing virgin queens as you describe in last issue of GLEANINGS, does it make any difference whether they come from the lamp nursery or the hatcher? I kept a lot of virgin queens caged up, four or five days, then tried to introduce them by the same plan by which I had successfully introduced a lot of fertilized ones. I lost about every one of them, proving true what you say in July 15 No., page 504. In Aug. 1 No. you want some plan for introducing a virgin queen, five to seven days old, to a colony queenless 24 hours. Where can they be

kept so that the bees will receive them? I believe, that if there is a plan found it will be by a cage that allows the bees to liberate the queen, the length of time for keeping her away from the bees being regulated by the thickness of candy or material they have to work through.

4—WM. FULLER, 19—45.

Woodville, Wis.

Friend F., giving plenty of room in a hive will often be the means of inducing the bees to store honey and not swarm; yet the rule is by no means invariable, for swarms often come out when the hive is only half full. When a colony of bees get their sections full, however, and their owner neglects to give them more, they are pretty certain to get the swarming fever. Your success in introducing virgin queens four or five days old is just about what I should expect. They can by no means be introduced as easily as a fertile laying queen.

WHAT AILS THE BEES?

This spring I bought from a farmer two colonies of bees in old box hives. One of them sent out three large swarms, and all are doing well. The old hive is now in a bad condition. It smells badly, and they don't seem to be doing much. Is it foul brood? if so, is there any remedy? As you are good authority on bees, I would thank you to tell me what I had better do. If it is contagious, would it not be better to destroy them?

N. W. EDDY.

Toledo, O., Aug. 24, 1885.

Friend E., I hardly think it is foul brood, from your statement, although it may be. Your great trouble is, that your bees are in a box hive, and the only thing for you to do is to break or cut out a comb containing brood, so that you can make an examination. If you find the combs really contain dead brood, and when the cells are punctured with a little stick or the point of a knife, you find this brood in a pasty condition, emitting a bad smell, you may be certain it is foul brood. Another symptom of foul brood is, that after the caps of the cells have sunken in, a small hole like a pin-hole is seen in the center of each cap.

HONEY-DEW AGAIN, BUT ONLY A SLIGHT TRACE.

I notice in the editorials of July 15, that you have heard no report from honey-dew this year. We have had some here, but not nearly as much as last year. There is just enough to give the honey a pollen, or breadly taste. I find it helps such honey greatly to heat it a little. How long will it take uncapped honey in the hive to ripen? The honey crop is a failure, compared with last year; bee-keepers will not get half a crop around here.

Hartland, Wis., Aug. 6, 1885. E. M. CROUCH.

SOME QUESTIONS FROM FRIEND BAUM.

I examined a nucleus that died of dysentery, and found some white substance on and in the comb, and, to my astonishment, I found it was table-salt crystals. Now the question is, Where did they get it, and what did they want of it?

Will the queen voluntarily leave the old hive in swarming time, or is she compelled to do so by the workers?

Bees are doing pretty well yet. They are still dropping in the forenoon. The honey and pollen come from corn-fields and part from red clover. The grasshoppers are destroying much red clover.

I have very nice white-clover honey, and it is selling fast at 15 cts. per lb. Last year I sold at 20 cts.; but this year a bee-man shipped to this part at reduced rates in the beginning of this season. I sold for 18 cts. per lb. till I had to sell lower; extracted, 12½ cts. per lb.

I love to read GLEANINGS and all it contains. May God, the giver of all good, guide and direct us all to that which is right and good, and ever on the side of righteousness!

A. H. BAUM.

Ashtland, Ohio.

Friend B., it hardly seems possible that the bees carry in enough salt water so that it crystalizes on the combs, as you mention. Was not some brine by some accident spilled on these combs?—I think the queen voluntarily leaves the old hive in swarming time, for I have seen them come out several times among the workers, but oftentimes only toward the last.

MORE ABOUT HONEY POISONING—A NEGATIVE VIEW OF THE MATTER.

I have just read the "Honey-Poisoning Case" on page 521 of GLEANINGS; and in response to your question, "Can any of our medical friends suggest what the poison probably was, from the nature of the symptoms given?" I take the liberty to say this: Gelsemium, or yellow jessamine, bears, generally in profusion, a bright-yellow flower, funnel form, an inch to an inch and a half in length, and very fragrant. The flowers appear in March and April. I am a student of homeopathy, and know something of the effects of the drug here under consideration. We give gelsemium quite frequently for intermittent fever, sudden and severe muscular effects from taking cold, etc.; and though we often give the strongest tincture, in one and two drop doses, at intervals of from 15 minutes to an hour or more, we never fear any poisonous effect. The most prominent symptoms of an overdose is a peculiar effect on the optic nerve, producing double vision; but aside from a slight disturbance of the circulation, I have never noticed any ill effect of what homeopathic physicians call an overdose. I can not believe that gelsemium in the honey caused the poisoning, because the symptoms do not indicate it; and because not enough could have been taken in that way to cause death. This, you see, is a negative answer to your question. Perhaps some one else can give the positive. The two together will cover the whole case.

J. D. GEHRING.

Park College, Mo., Aug. 15, 1885.

A REPORT OF THE STANLEY AUTOMATIC HONEY-EXTRACTOR.

I have had extremely good success this season with my bees. It is the first season I ever extracted, and I always thought that I never would extract any honey, for I have seen others work their machine, and there was so much daubing around, lifting the combs out to turn them, that it sickened me of the extracting business. But when I saw the Stanley Automatic honey-extractor, then I made up my mind it was the machine for business, so I bought a three-frame machine, and found it to be just what it was represented, and I would not take any other machine as a gift, if I had to pay \$50.00 for one of the Stanley machines. I have extracted wired combs, and those that were not wired, and have not broken a single comb. My combs are 12 inches square, and would be more liable to break than the

Langstroth. If I were to buy another machine I would get a four-frame instead of a three-frame, as I could get along so much faster. It would take no more turning to get the honey out of four frames at once than three, and but a slight difference in the price of machines. My advice to all would be to buy a four-frame machine. I have always run my bees for comb honey; but if I can get 8c per lb. for extracted at home, I shall not use any more sections.

F. F. CROCKER.

East Randolph, N. Y., Aug. 12, 1885.

YOUR FOOT-NOTES TO CORRESPONDENCE.

I like them. Your young readers would soon be led into devious and mysterious caverns, and probably be lost in the great "Mammoth Cave" of our chosen and beloved science, without our trusted knight of the lantern, whose years of experience and honest walk and pleasant ways have guided us so happily and safely on. Whenever you give up the lantern to one of the new explorers, even though he has gone a little way safely, we shall all feel uneasy, and wish to procure a guide that will lead. I know of no publication more completely edited than is GLEANINGS. And, too, its smooth paper, convenient size, clear print, appropriate headings, full addresses of correspondents, and a dozen other admirable features, make it a marvel of excellence. It is to be hoped our friends will subside in their suggestions.

J. L. CALDWELL.

Mart, Texas.

A WISCONSIN REPORT.

This has been a poor honey year so far; a late and cold spring; white clover yielded very little. Basswood, of which there is a great abundance, did not bloom as full as usual, and the very warm weather and plentiful rains ripened it too soon. It lasted only five or six days. Several men in this county who have large apiaries tell me they have taken no surplus, and do not expect any. One of these parties took 15,000 lbs. last season. I am doing better, as I have not so many bees (ten colonies, spring count). One of my first swarms has given me 70 lbs. of very fine comb honey in 1-lb. sections. I may get 500 lbs. all together. There is a number of honey-plants here that the bees do not work on. The Simpson honey-plant grows profusely in the wood-pasture adjoining my apiary, but I have not seen a honey-bee on it, and I have been watching closely. The yellow-jackets work on it from morning until night. Do you think they drive the bees away, or what is the trouble? There is plenty of the common thistle, also, and the bumble-bees and other insects work on it; but the honey-bees do not notice it. They are working now on early buckwheat and the asters. I will send a full report later.

HARRY LATHROP.

Browntown, Green Co., Wis., Aug. 12, 1885.

Friend L., the reason why the bees do not work on the Simpson and other plants you mention, is because they are getting plenty of honey, more to their fancy, elsewhere. Some time ago we had a communication from a friend who had a patch of figwort, but not a bee could be found, although it was laden with blossoms, and their little cups were full of nectar. One morning, however, he was astonished to see the whole piece in a perfect roar, and literally alive with bees. The other pastures had failed, and they had just discovered the figwort.

LOCATION OF AN APIARY IN A VALLEY, NOT DESIRABLE; A GOOD YIELD FROM BASSWOOD.

In your A B C book, on p. 11, you say you would have the apiary located in a valley rather than on a hill. Your reasons for the same are no doubt good. I live on the West Fork of the Monongahela River, a pretty large stream, and in the summer time there are a great many heavy fogs, lasting at times until ten o'clock in the day. I have thought that the fog was injurious to bees, as they seem to do better on the river hills than along the river bottoms. I am just a beginner, and wish to locate permanently soon. I should like to hear from the brethren who have had a chance to know in regard to the above. GLEANINGS is a very welcome visitor to me indeed. There is no white clover here this summer, but the best yield of basswood for years, lasting about seventeen days. Bees are now working strong on buckwheat in the for part of the day. They swarmed but little here this season.

L. H. ROBEY.

Worthington, W. Va., Aug. 12, 1885.

MANILLA ROOFING-PAPER FOR PERFORATED DRONE-EXCLUDERS.

I send you a piece of Fay's manilla roofing. Won't it do for honey-boards and drone-excluders, perforated like your zinc? Would the bees cut it away? How would it do enameled, after being perforated? I notice in GLEANINGS that wooden boards are used; but the bees fill the holes. What would the difference in cost be, between zinc and the manilla? J. W. PARK.

Columbia, Tex.

Friend P., the sample of paper you send is very nice, and it seems as though it might answer the purpose, although I should be afraid the bees might in time cut or bite away the holes so as to make them a little larger; then you would have the queen getting up, without being able to find her way back again, as friend Fowls mentions on page 592. I am afraid, too, we shall have the same difficulty with the perforated wood before we get through with it.

A CAUTION IN THE USE OF PARIS GREEN.

Having read the articles on poisonous honey, and your comments on the same, I conclude your theory in regard to the poisoning is quite possible. This morning I had occasion to put Paris green on some late potatoes that have got somewhat weedy, and I noticed that the honey-bees were at work on several varieties of the weeds, and I was careful to pull all such up where I put the green. The weeds I noticed them working on were heart's-ease, a plant much resembling smart-weed, and black plantain, or buck-horn. I have seen the bees in large numbers on chick-weed in the forenoon. This is a common weed in many localities, and grows under potato-vines and all sorts of vegetables. It would be an easy matter for the blows to get severely poisoned by the poison being carried down by heavy dews and rains.

RASPBERRIES AS A HONEY-PLANT.

We grow all sorts of raspberries, and during their blooming they are literally covered with honey-bees. I send you a box to-day containing a cutting of Conover's Colossal raspberry, to show you what it looks like when in bearing. The sample is from a plant that was set last spring. I bought eight plants a year ago last spring, and buried the tips,

from which I got nearly 200 good strong plants, and we picked 21 quarts of mammoth berries from the eight hills. I can furnish you a few plants next spring if you will jog my memory by a postal about that time. Of all the black caps I ever grew, I have tried about every variety offered; and the Gregg takes the lead, unless you choose to call the C. Colossal a black cap. P. SUTTON.

Exeter, Pa., Aug. 11, 1885.

Thank you, friend S., for the specimen of the Colossal raspberry; but the fruit had all spoiled just before it reached us. I should be very glad indeed to get some plants, either this fall or next spring, if you will be kind enough to furnish us some. Raspberries and buckwheat we can go into safely, for furnishing bee-pasturage; and if the honey doesn't pay, the fruit and grain will. By the way, I want a little book written on buckwheat, and another on the culture of raspberries. I want them about the size of our potato-book, and I want the work done as thoroughly as Mr. Terry has done it in regard to potatoes. Where is the man who has made either buckwheat or raspberries his hobby for a sufficient term of years so he can give us an exhaustive treatise, taking in all the points, and bringing them clear up to the latest methods of the present day? Now, friends, please don't write such a book, any one of you, until I have first had some correspondence with you. We want a man who has raised these crops by the acre, and who has made money from them.

DIVIDING COLONIES.

If the bees will swarm in season, we let them do so; if not, we divide. For this, many plans have been given; nearly all say, "Hunt up the queen, leave her with a few bees and a few combs on the old stand; set the new hive at a distance, having in it the largest portion of the bees, combs, etc." Now, we want to say we have tried this plan, and it has never proved satisfactory. In the first place, the colony on the old stand gets nearly all the bees, leaving the other very weak. In the next place we can seldom find the queen in a black or hybrid swarm when the swarm is very large. Our plan is to place a new hive by the side of the old one, and then, with smoker in hand, give each one half the bees and half the old combs and brood; fill up each with frames of foundation; spend no time in looking for the queen; let her go where she pleases. Now set the old hive a foot or two on one side the old stand, and leave the new one about the same distance on the other side. Make them look as near alike as possible. If you next day discover most of the bees are going into either part, move that one a little further from the old stand. In this way we can *always* get them nearly equal.

Now about the queen. The hive that has none will soon show it by their actions—running about. Now, if you have a good laying queen, all the better, if not, give a queen-cell; if neither, they will soon raise a queen of their own. The work is now done. We would rather have either one of these for wintering than any young swarm, for each has one-half old combs. These should be placed in the center of the hive for winter use. Of course, hives must not stand too close together, to carry out this plan. We generally divide, in this section of buck-

wheat, about the last of July or first of August, but the plan will work any time in the summer.

Cochran, Pa., Aug. 24, 1885. N. N. SHEPARD.

The above directions from friend Shepard, who gave us the swarming-box, I should approve in every respect; only if the division is to be made as far north as we are, as late as it is now, I would by all means have a laying queen for the queenless division; and, in fact, I think it would pay to have a laying queen at any time where a strong colony is divided.

HILLSIDE APIARY; THE LATTER PART OF THE SEASON A LITTLE MORE FAVORABLE.

I have named my apiary the "Hillside Apiary," and have the hives arranged somewhat after one of the cuts in the A B C. I do not think that my hives will average over 25 lbs. apiece this year, as it was so very dry during the white-clover season; but we have had lots of rain here for the past two weeks, and the flowers are coming out nicely now, and I see the bees are working very fast in the boxes. Two or three hybrid swarms in particular are doing a brisk trade just now, and it may be I shall get my 50 lbs. of comb honey from a hive yet. I hope the warm weather may continue for awhile this month and the next. I might make a good crop, the way clover seems to be blossoming now.

WILMER J. MOORE.

West Grove, Pa., Aug. 24, 1885.

CLIPPING QUEENS' WINGS.

I want to tell Ole Foggy (GLEANINGS, Aug. 15), that I want one wing cut off from every laying queen in my own apiary. Why? Because after 5 years' experience with clipped queens, I am fully convinced that I can manage bees at swarming time with more ease and less loss of queens and bees than I can in any other way. I have increased my apiary from two colonies in 1880 to 57 colonies at present date; and to count what I have sold and what have died in winter, I have probably hived 100 swarms with queens having clipped wings, and I can say truthfully that I have lost only one queen in any way at swarming time, and have never had a swarm to run off and leave me. My bees never supersede their queens until they are ripe with old age, and are on the decline. My neighbors say that they lose one swarm out of every ten by their going off to the timber. I can not see why Doolittle's bees and my bees and many others' behave so well with clipped queens, while A. I. Root's, Heddon's, and many others' behave so badly that they condemn the plan.

J. R. NICHOLS.

Danville, Ind., Aug. 25, 1885.

AN APICULTURAL DISPLAY AT THE CHILLICOTHE FAIR.

Friday last closed our county fair. The fair was a success. For the first time in the history of the fair there was a display in the line of apiculture. C. M. Roberts had Root's foundation-machine, some foundation drawn out by bees, some extracted and comb honey, and a very handsome large can for extracted honey. E. Magenhoffen, an extractor; D. Brown, an observatory hive of Holy-Land bees and some queens of the same race. I had an observatory hive, with one frame of bees and brood of the native black bee, the style of hive I use, with its fixtures, a queen-nursery after Alley, a fertilizing hive, and a few other things in the bee line. There was a very pleasant interest manifested in our dis-

play, and propose to improve on it very much next year.

FRANCIS W. BLACKFORD.

Chillicothe, Ross Co., O., Aug. 24, 1885.

PACKING FOR AIR SPACE OF HIVES.

Our English friend Cheshire, who has made so many able contributions to scientific bee culture, suggests cork waste as the best material for this purpose. Where it can be readily procured, nothing can be better. I will name something which in this country can always be got—dry corn-cobs, ground say as fine as tan-bark. The great non-conducting power of corn-cobs is well known; and ground as I suggest, cobs would be very nearly as good as cork.

L. L. LANGSTROTH.

Oxford, Ohio.

Friend L., at the Toronto convention this subject of cork for packing was discussed quite a little. The difficulty of obtaining it in many localities is the principal objection to its use, so far as I know.

WHY DO THE BEES THROW OUT CAPPED BROOD?

What makes young swarms of bees cut out their young bees just as they are going to hatch? I have had three after-swarms do this.

J. G. MEEKS.

Barnhill, Ill., Aug. 24, 1885.

Friend M., it is my opinion that they do it because your combs are infested with moth worms. Were not the combs exposed to the moth miller before you hived your young swarms on them? If I am right, it would do no particular harm, especially if your bees are Italians, for they will very soon have the combs all cleared from these pests.

COLONIES THAT WON'T START QUEEN-CELLS.

I have had trouble to get my bees to build queen-cells, some colonies refusing to altogether, and others building very poor ones. My neighbor, Mr. J. T. Wilson, has the same trouble. Why is it so?

Nicholasville, Ky., Aug. 10, 1885. J. W. SHEBY.

I should say that such colonies had a queen of some sort, or a fertile worker—see the A B C book. If you want a great many large strong queen-cells, you want to use a colony of bees that have some Holy-Land blood in thier composition.

SWARMS GOING OFF WITHOUT CLUSTERING.

I feel like writing a few words in reply to Ole Foggy, concerning the matter about bees always settling or clustering when they issue naturally from the hive. He says, "They never, never, never go off without first settling." Now, friend Foggy, I have had two swarms of that kind myself. I was on hand when they began to issue from the hive, waiting patiently for them to cluster; but the time was short, for they soon began to move off, and I followed; but when they came to the timber they arose over the trees and left me below, and I retraced my steps, feeling badly over my loss, for they were first-class swarms. One year ago this season a neighbor of mine had a swarm come off on Sabbath afternoon, but they did not look for a place to cluster, but started for the woods.

My father got his start of bees from a swarm of this kind. A neighbor had a swarm issue, and left without clustering. He followed them about three-fourths of a mile and treed them, and told my father he could have them. But I will agree with Foggy,

that it is all nonsense to thump the bottoms out of tin pans and pails, and to shoot, for the sake of making a great noise to deafen the bees so they can not hear the "king," as such people term the queen.

E. SALISBURY.

Ossian, Ind., Aug. 25, 1885.

LETTER FROM GEORGIA.

HOLY-LAND BEES; HONEY-PLANTS; PERFORATED ZINC; MONEY CROP.

BRO. ROOT:—I have thoroughly tested the Mt. Lebanon strain of Syrian, or Holy-Land bees, and I must say that I believe they are the bee for the South. I regard them as superior to the Italians in several respects. 1. They multiply more rapidly, and swarm less. Their colonies are full to overflowing all the time. The Italians here are always swarming during the swarming season. I have known the Holy-Lands to swarm but once.

2. They never disturb any one unless they are first disturbed, while a stray Italian is constantly stinging somebody, especially when they have a supply of honey on hand. For several years I kept my Italian apiary near my dwelling; but they were constantly stinging the cook, and putting members of the family to flight generally. I was compelled, through self-defense, to change these to Holy-Lands, and the trouble was over. The Holy-Lands attend to their own business.

3. They don't dwindle away in the spring, like the Italians, but are always strong, healthy, and industrious. There is but one objection to the bee. They require more careful handling than the best strains of Italians. In this respect, however, they differ but little from what we call dark Italians. A veil should be used in manipulating them.

I still keep the Italians in a separate apiary one and a half miles distant, and they are doing well. My choice queen gives me considerably over a hundred pounds of comb honey, and made the most of the comb at that. She is very large, beautiful, yellow, and her progeny well marked. I am just starting an apiary of the albino bees at another one of my farms, and hope by the end of another year to be able to report further.

HONEY-PLANTS.

The mimosa and all its species is a fine honey-plant here. I have seen the bees swarm upon its wide-extended boughs all day long, attended by troupes of hummingbirds and other honey-gatherers. You know the sensitive plant belongs to this species. It is also much frequented by the bees. The flowering pear is a great favorite with our little friends; and as it blooms early it is very valuable. The virgin's bower, and goldenrod, are now in bloom, and also King Cotton, from which the bees derive much honey. Our best bee-plants are elm, black gum, poplar, persimmon, goldenrod, horsemint, the clovers, clematis, white elder, cotton, and sourwood, with which our country abounds. Think of that, and add to it the fact that a two-frame nucleus can be wintered on the summer stand, without any protection, and tell us why we may not do well at bee culture in Georgia.

PERFORATED ZINC.

Italians and Holy-Lands all work well through perforated zinc plates (old style). Where it is not used, the queen will invade the surplus department.

Griffin, Ga., Aug. 25, 1885. W. E. H. SEARCY.

REPORTS DISCOURAGING.

REPORTS from different quarters are what we want, either good or bad results. In this vicinity our report so far is not very flattering. Our bees wintered badly—cause, neglect.

This spring was very backward. The bees did not gather much from early flowers, rarely enough for brood-rearing. White clover came in bloom June 1, and for a few days bees gathered honey very fast; then wet weather set in as last year, which made white clover a failure. At present the bees are doing something; and I think, as we have had fine rains the last few days, the fall will be a good one. Sometimes the fall season is splendid. Buckbush is just in bloom. Smartweed, Spanish needle, and goldenrod, are to come.

Clarksburg, Mo., July 27, 1885. C. H. MCFADDIN.

The honey crop for 1885 in Pennsylvania will not be more than one-tenth the average. This is much less than I reported a month since, but it is certainly the truth. I see California and other sections also report failure. It would, therefore, be advisable to expect better prices than for many years.

S. W. MORRISON.

Oxford, Pa., July 26, 1885.

A LETTER FROM F. W. BURGESS.

He Gives Us the Benefit of His Experience on Several Matters.

REVERSIBLE FRAMES.

MY experience with reversible frames convinces me that there are advantages besides having the combs built to the bottom-bar; but I doubt if it pays, and I doubt if they ever come into general use. I find, with 80 colonies and my office work, I have no time to manipulate frames, but, like Heddon, feel the necessity of working hives rather than frames.

CARNIOLAN BEES.

On account of their color I gave them no favor. They seemed very gentle, and are probably good in other respects, but they will certainly make hybrids resembling a mixture of our common blacks. I want none.

PERFORATED ZINC.

It usually keeps the queen in the lower story, and makes it easier to remove frames for extracting. I should never use it for box honey. I like it for extracting.

MAKING NUCLEI.

Doolittle's plan is first rate; but as I have made mistakes I will tell them. I lost one queen while giving a comb that had eggs and brood in it. I lost another by carelessly giving one with the bees, and I lost the third by making a nucleus from a hive that was queenless, and contained fertile (?) workers, and it is this which might be repeated by others.

INTRODUCING VIRGIN QUEENS.

On page 522 of GLEANINGS, Doolittle says he can take bees from three nuclei, and shake one-third of each into a cage, and thus make three cages of mixed bees which will accept a virgin queen; but when he puts them back into their hives, five out of six will be killed by bees returning from the field, etc. I would say, put them on a new stand, far enough removed to avoid the returning bees.

MAKING WAX.

I melt in a tin kettle half full of water (iron colors

the wax). When it boils I dip and strain through two folds of mosquito netting spread over a coal-sieve, into a large honey-can the size of an extractor, it being half full of water. Empty the strainer as often as the dirt clogs the wax. Keep every thing hot, and there will be no waste. The wax is easily removed from the can when *thoroughly cold*, and does not adhere to the sides at all. From the bottom of the cake I scrape off the dirt, melt and pour again, when the wax is as beautiful as Mr. Dant's. The last cake I made was 18 inches in diameter, and 8 thick. The above mode is not dauby nor wasteful. I give it in answer to your foot-notes on page 550, August GLEANINGS, for fear you may mislead. I, too, have discarded a wax-extractor.

Huntington, L. I., Aug., 1885. F. W. BURGESS.

In regard to introducing virgin queens, friend B., the objection would be that we should have to make new colonies all the while, and this would generally be an objection, it seems to me. Friend Doolittle contemplated introducing virgin queens to such colonies as were queenless, or to nuclei already established. I have for years been well aware that we could introduce queens easily at the time we formed a new nucleus. In your plan of rendering wax, friend B., it seems to me there must necessarily be considerable good wax adhering to the refuse contained in the mosquito netting.

MRS. CHADDOCK TELLS HER EXPERIENCE IN HONEY-GETTING.

A GOOD WORD FOR OUR OLD HONEY QUEEN, AND SOMETHING ABOUT NOT WORRYING, ETC.

THREE years ago you told in GLEANINGS about a colony of bees that you had, that gathered so much honey that you called her your "honey queen," and you raised queens from her and said if any one wanted to try them, to say "Honey queen" when ordering. As that was just the kind of queen that I had always been wanting, I sent for one immediately. The answer came back that the "honey queens" were all gone; but afterward, when I sent for queens, you sent me one of them. It was the 5th of July when she came, and too late for the white-clover honey; and as the next two seasons were no honey years, I could not tell any thing about her. I always kept track of her, however, and this year she gave 100 lbs. of honey, while the most that I took from any other hive was from 36 to 40 lbs.

This has been a splendid year for bees, and a pretty good year for honey—not one of the best, but pretty good. This honey-queen colony was the strongest one I had last spring, and before swarming it was working in two sets of sections. When it swarmed I hived it (or, rather, let it hive itself) on a full set of empty combs, and transferred the partly filled sections from the old colony to the new one. Seven days later I put on another tier of sections. When the white-clover honey crop was gathered I took off the three boxes of honey—all of it bulged out and capped over. I sell honey in these boxes nearly every year, and I know they hold from 35 to 40 lbs., so that I am safe in saying that this honey queen gave me 100 lbs. of honey. Besides this, the old colony sent out an after-swarm, and they have some honey in the sections, and the old colony has

a box nearly full. But as I changed these about, just as it suited me, taking out and putting in brood, I can not tell what credit to give them, so I give them none at all. Next year (if this queen lives) I will put every thing down in black and white, and she shall have all the honor that is due her.

I want to thank all the friends who have been so kind as to write me letters of "condolence" about my beeswax experience. I am very sorry that sister Culp lost any sleep over me, and I feel very meek under the Scripture she quotes. But, does not same Bible say, "Be ye not troubled," and "take no thought for the morrow," "consider the lilies," etc.? Now, I think I am rather prone to gathering up the fragments, so much so that sometimes, when I have twenty things to do all at once, I envy any one who can sit calmly with folded hands, "considering the lilies," and I wish that I could do it too.

In the first flush of disappointment, when I thought I had ruined all that beeswax, I felt as I suppose a fellow does after he has spent all his nickels, for ice-cream for his girl, and then she suddenly deserts him for the "other fellow." He feels as if all flesh is grass, and vows he'll never be kind to any one again; but pretty soon some other girl smiles on him, and he goes to buying watermelons for her, and taking her to the fairs, and life is worth living after all. When the Dantons wrote me that my beeswax was spoiled, I supposed that I should not only have to lose it, but pay the express charges also. But afterward they wrote that there was enough good wax in it to pay the express charges, and for the foundation that they sent me (about two dollars' worth), so that I did not feel quite so desperate. The point with me is, that if I can not make money without worrying all the time, I won't make money at all. I think there is no one thing so bad for people, especially women-folks, as worrying. When I read what you said about not having the doctor for Huber's sprained wrist I wanted to say, "It is better, much better, to have the doctor, and let him rub on the arnica, even if it does not a particle of good, than to have the mother worrying all day and all night about it, thinking that he might be deformed for life." I tell you, no woman can afford to worry that long to save two dollars.

I like sister Culp; I like her "grip" and hang-on. I read about the way she "fattened" her bees on maple sugar, and I liked that very much. I feel sorry, too, for the lonely way she is called to walk in, and am glad that she has the grace and strength to walk in it bravely. MAHALA B. CHADDOCK.

Vermont, Ill., Aug. 20, 1885.

I am very glad, my good friend, to know that you are getting a good crop of honey, and that the honey queens, or red-clover queens, which I believe is what we called them, are still keeping up their reputation. I should say they are celebrated for their longevity as well as for the working qualities of their bees.—I like what you say about not worrying; but I do not understand it to mean that we can not push things, and make them boom; that is, one may be cheerful and full of peace, even if he does not sit down with hands folded. In regard to the doctors and arnica, by all means have them if it will make you feel easier, even if they do not do a particle of good in that particular case.

TOBACCO COLUMN.

A BOY 17 YEARS OLD STOPS ITS USE.

FIVE months ago I left off the bad habit of tobacco, after being its slave five years. Please send me your little book, "Dose of Truth."

HARRY L. DECKWORTH, age 17.
Greenwood, W. Va., May 28, 1885.

I have used tobacco for quite a while; but if you will send me one of your smokers I will try to stop; and if I can not, I will return the money.

North Adams, Mich.

L. KENRICK.

HOW THE "DOSE OF TRUTH" ACTS AS A REMEDY.

My friend has received the smoker you sent, and is very much pleased with it. The lecture on tobacco that you sent him, he has read, and he remarked to me this morning, that if he had not quit tobacco before, he should discontinue its use after reading that. Friend Root, you are doing a grand work; go on, and may the Lord bless you! J. F. TEMPLE.

Packerville, Ct., June 16, 1885.

I am in receipt of your catalogue, also GLEANINGS. After reading the latter I have concluded to abjure entirely the use of tobacco. Should I ever resume the use of it I will cheerfully remit the price of the smoker. I have just commenced in the bee business, and can not as yet tell how I am going to succeed; still I think I can see some money in it. In Eastern or Central Florida, I think bee-culture would be a paying business; here, however, on the Gulf Coast, with our variable weather, it is as yet only an experiment. JOHN H. RAUCH.

Warrington, Fla., June 19, 1885.

I have just completely thrown tobacco aside; and if you are still in the habit of sending your subscribers a smoker when they quit the use of it, I should be very proud of your present — not that I quit the use of it for the pitiful sum of a smoker, but I saw that it was of no benefit to me, only an expensive, filthy, indecent, dangerous habit, liable to burn up everything I had. I would thoughtlessly go into a corn-crib, or anywhere else, with pipe lighted, and so I came to the conclusion that a man could not be a safe gentleman and use the filthy stuff. If you see proper to send me the smoker, and I ever resume the use of tobacco in any way, I will pay you twice its value. J. W. SEGLER.

Paris, Tex., July 6, 1885.

A GOOD YIELD OF HONEY, AND SOMETHING THAT IS A GOOD DEAL BETTER STILL.

I send you a sample of my "Northern Michigan" honey. How does it compare with the honey of your State? The honey season is over, and we have had a splendid yield. I have taken 100 lbs. from some swarms, and they have plenty for winter. I shall winter my bees on natural stores. Well, Bro. Root, I have quit the use of tobacco, with the Lord's help. I have been a smoker for 18 years. I threw the pipe and tobacco away four months ago. I have had no wish to take it up again. The Lord being my helper, I never shall. I feel a great deal better. I can go to bed and sleep soundly all night, and get up in the morning feeling a great deal better every way. I believe that tobacco comes pretty near being a twin brother of whisky. Thank God, I never drank whisky.

J. REED.

Orono, Mich., Aug. 19, 1885.

Many thanks to you, my good friend R., for the nice sample of comb and liquid honey you send. It compares favorably with the best we have seen this season, or any other season, for that matter.—May God bless and strengthen you in your determination to abstain from tobacco evermore! I suppose you wrote and told me about it, simply because you know that it will make me feel happy, and I thank you for the compliment you pay me there. It is true, you do not say any thing about having a smoker, but I shall enjoy the privilege of sending you one all the same, and you can keep it as a reminder of your resolution.

KIND WORDS FROM OUR CUSTOMERS.

The A B C book and queen came to hand all right. Many thanks, I am just beginning bee-keeping, and your book is invaluable. I think the queen began laying in less than five minutes after she was released.

FRED TERISS.

Union Center, N. Y., July 6, 1885.

Please find inclosed 50 cents for GLEANINGS. It is always welcome in our home, for we love to read Our Homes. I think it ought to be in every family in the land.

So let our lips and lives express
The holy gospel we profess;
So let our words and virtues shine,
To prove the doctrine all divine.

Stone Creek, O.

HENRY PAULS.

HOW THE CHILDREN TAKE TO THE CARPET-SWEEPER.

The children put the handle in the sweeper as soon as we got home, and went to work. They took up all the dirt they could find, and then tore up pieces of paper and threw them on the floor to get it to take them up. In the afternoon Harry came to me and asked if he could not tear up some paper, and throw it around; he said he wanted to see the carpet-sweeper "eat it."

M. B. CHADDOCK.

Vermont, Ill., Aug. 20, 1885.

KIND WORDS FROM A NEW HAND AT THE BUSINESS.

I am one of those awkward, good-for-nothing bee-masters that I have just had the pleasure of reading about in your A B C book; or, rather, I am one of those green fellows who have just taken hold of a small lot of bees, thinking perhaps they might make enough for themselves, and enough to spare me to keep soul and body together. And I am a little afraid that I haven't got quite as much energy as I might have; however, as necessity knows no law I shall try to "take the bull by the horns" and see if I can make friends with the dear little creatures, and get them to divide profits with me. Well, enough of this. I purchased, a few weeks ago, one of your A B C books, and I assure you that I never read a book with so much pleasure; every bee-man should feel under everlasting obligations to you.

P. A. WEST.

Milledgeville, Ga.

SOMETHING ABOUT OUR EXTRACTORS AND FOUNDATION-MILLS.

I've tried the "wash-machine," as the people called it at Hopkins Station. Every one, nearly, wanted to know what it was for, and how it worked. I told them what it was designed for, and now I can tell them how it works. I never saw a fdn. mill myself before, so you see I had the first one to work with I ever put eyes on, and have had good luck in trying its work. I have never had better fdn. than I have now—no one to show me the first principle. I will inclose sample of my work. I have made about 25 lbs., all like this sample. Does it not look well for the "first flap of the boot"? I made narrow dipping-plates, which I think work finely, made of hard pine lumber. I never found the directions for putting the two pinions together right until my eyes happened to spy it on the outside of an envelope, tacked to the board that goes under the rolls. I thought it to be my address, but it's all right now. The tank is fine for the money it cost me.

Wayland, Mich., May 26, 1885. GEO. TISHHOUSE.

Since I last wrote to you I have tried the foundation-machine, and it works well. I can turn out foundation with higher side-walls than any I have seen here; and several other bee-keepers about here have remarked the same thing.

Hastings, Hawks Bay, N. Z. JAMES ADAMSON.

My Novice extractor arrived O. K. from your factory, and works like a top. Every thing I get from you always gives me pleasure. Said one of my bee-friends the other day, "A. I. Root is a good man; what you get from him will be all right." "Amen!" said I, and so it is, my friends. W. E. H. SEARCY.

Griffin, Ga., Aug. 24, 1885.

THE BLISS TELEPHONE.

I received the telephone all right, and it is a little "daisy." It works better than one here which cost \$16.50. I think I can sell quite a good many of them here. There are ever so many who tried mine, and like it so well, they say they must have one. JAS. R. WHEELER.

Waterford, Pa.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,

EDITOR AND PUBLISHER,

MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, SEPT. 1, 1885.

The Lord is my light and my salvation; whom shall I fear? the Lord is the strength of my life; of whom shall I be afraid? — PSALM 27: 1.

THE BEST GIFTS.

THOSE God gives us *every day*, and which we shall forget to be thankful for if we don't look out.

PRICES OF SUGAR AND HONEY.

THERE has been a recent advance on sugar, of about a cent a pound, which will probably help the prices on honey as much as that, or more.

THE SIZE OF OUR FAMILY AT THIS TIME.

It looks some as if we should not get up to 7000 again this year; but we are thankful, anyhow, for the 6544 which we number to-day, Aug. 28.

REMEMBER THE MEETING OF THE OHIO BEEKEEPERS.

WE want every bee-man, who can afford the time and expense, to be on hand Thursday and Friday, to keep up the reputation of our fair State in honey matters as well as in other things.

STEEL CARPET-TACKS.

THESE are now made on the plan of the wire nails, and we can furnish them in two-ounce packages at 5c per package; or in half-pound packages at 15c per package. If wanted by mail, add 1c per ounce extra for postage.

STOPPING THE BEES FROM ROBBERING, EVEN IF IT IS SUNDAY.

ONE of the friends takes me to task for setting the apiarist at work stopping the bees from robbing, while I went to church. He is mistaken. We all went to church, and we always do all go to church—that is, so far as the bees are concerned; but if I should discover the bees were robbing badly, just as it was church time, I should by all means stay at

home as long as it might be necessary to stop robbing, but not any longer.

SABBATH-BREAKING AND FALSIFYING.

YOU will notice that the bee-man who slandered friend Muth (mentioned on page 589) says he examined his bees on "Sunday." May be that is one reason why he has got to be so awfully untruthful; for Sabbath-breaking, as a rule, opens the way to other grievous sins.

CALADIUM ESCULENTUM.

AFTER the letter on page 496, in regard to this plant, was printed, we sent to James Vick and got one of the bulbs. To-day, although it has only two leaves, they are both exuding what seems to be pure water. The water forms in a large globule in the center of the leaf, and once in a while drips from the point of the leaf, just as Mary said it would. The plant is a wonderfully rapid grower, and is a great curiosity in the center of our coleus bed on our front lawn.

OUR THIRTY-FIVE-CENT WAX-EXTRACTOR.

THIS has been improved recently, by using a retinned wire-cloth sieve, making it much less liable to rust, and more durable. Small bee-keepers who have only a limited amount of wax to render, will probably find this the cheapest, cleanest, and most economical arrangement they can use. Just throw your bits of refuse wax into the sieve, packing it down if you choose, or squeezing it up into a ball. When you get a sieve full, set it into the dish-pan, which pan should be about half full of boiling water. Set the whole into the oven until the wax is all melted out and gone through the sieve; then lift out the arrangement and set it away to cool. The wax will be found in a nice cake on top of the water.

AN IMPROVEMENT ON THE GLASS HONEY-PAILS.

MORE than one of the friends have been annoyed to find that when one of these pails has been used for honey, that the honey will leak out where the bail is attached, when the pail is thoughtlessly turned over. I presume the manufacturers made them this way because they were primarily intended for jelly, and articles that do not run readily. This difficulty is now entirely removed, however, and the pails are very much improved in other respects, besides the following reduction in prices:

Price of the half-pound, 5c; 10, 43c; 100, \$4.00; 1000, \$35.00.

One-pound, 5c; 10, 48c; 100, \$4.50; 1000, \$42.50.

One and a half pound, 10c; 10, 75c; 100, \$7.00; 1000, \$65.00.

Please order only in the above quantities, as they are packed in boxes of 10 and boxes of 100. We are now buying these in such immense quantities that we are enabled to give the above greatly reduced rates. The 2-lb. Muth honey-jars are also reduced to \$6.50, instead of \$7.00 as given in our price list.

A CARPENTER'S SAW FOR ONLY FIVE CENTS.

SINCE the low price of iron and steel, tools of many kinds have cheapened wonderfully. When I was enabled to get a nice little saw for the women-folks for only 25 cts., I thought I had accomplished wonders; but now a firm in the east have sent me samples of a little saw, intended for juveniles, but made of so good a quality of steel that they may be put in order so as to do a great many kinds of light work with wonderful facility. I first saw our boy

using one, who crates our cages of bees, and he declared that it was a tiptop tool for that kind of work. The blade is $4\frac{1}{2}$ inches in length and has a good wooden handle, like small-sized saws such as carpenters use, and yet we are enabled to afford it for the insignificant sum of only 5 cts. Postpaid by mail for only 8 cts.

PORTULACCA AS A HONEY-PLANT.

THE friends will remember that we mentioned this about a year ago. We have now a larger bed than we had last year, and during the middle of the forenoon it is to me one of the most beautiful sights furnished by any one plant of the floral kingdom; neither do I know of any other that attracts such a great number of bees as does this during the time of day when the flowers are open. Every bee-keeper ought to have a portulacca-bed. The plant is very hardy, and will grow on almost any kind of soil, and it takes only five cents to get a paper of seed that will give you a wonderful variety of colors; and as you glance from one shade of color to another, you find yourself unable to determine which is the most beautiful. We can mail a package of seed of the above, on receipt of the price.

OUR CARNIOLAN BEES.

YES, they are hatched out. Those from the queen friend Benton marked "best," look (as I suspected they would) so much like black bees that I think I should have pronounced them so, had I not known differently. They have, however, a downy-bluish appearance that our blacks never have; and, in fact, were it not for the fact of the absence of the yellow bands, they would very closely resemble the Holy-Land bees when first hatched out. Well, we had two queens, as you may remember; and the one that was not marked "best" produces very fair Italians, and her young queens are also yellow, like Italians. This queen has probably met an Italian drone, or else our apiarist got her swapped by some means, although he declares it is impossible, and he is too careful a man to make it very probable. No matter; we are content to pay the price of two queens for getting one genuine Carniolan. Her young queens—that is, the young queens from the one marked "best"—are black, or quite as dark as native queens. The Carniolan mother is now quite a good-sized queen, and is of a dark copper or leather color. We shall have young queens laying in perhaps a week or ten days. The price will be \$1.50 for what we have to spare this fall. Of course, they will be untested.

DO GOOD TO THOSE THAT HATE YOU.

IN newspaper controversies, and controversies of almost every other sort, each party, as a general thing, seems to think it incumbent on him to tell every thing he can, that will be damaging to his opponent. He seems to take it for granted, that the more crookedness and evil he can discover and bring to light, the greater his chances for success. Success in what? Why, I suppose in making out himself to be a good man, and "t'other party awfully depraved." But, how does this match with the injunction Jesus gave us at the head of this editorial? Of course, it doesn't match at all. "But," you may urge, "is it right for us to suffer by misrepresentation, false charges, and other like injustice?" If by defending yourself from these false charges it is going to result in serious damage to your opponent, I do not believe it is best to try to defend our-

selves. There is no lack of instruction in the Bible on this point. Paul says, "Why do ye not rather take wrong?" and, again, Jesus says, "I say unto you, resist not evil;" and furthermore, "Blessed are ye when men shall persecute you and revile you," etc. I have thought the matter over, dear friends, a good deal, and prayed over it, and I believe a great many times it is not best to make any reply at all. Suffer the wrong in silence, for the time being, but take great care that your general conduct with your fellow-men be such that the world will be apt to say, as soon as the slander is started, "There is surely some mistake in this charge. From what I know of Mr. A., and his general conduct in life, I can not for a moment believe a word of it." Now, my friends, don't you believe this would be the best way? It will have this effect, at least: The controversy and jangling will probably stop where it is. If you don't agree with me, and think it best to "pay every man back in his own coin," suppose you try the latter plan, and make a note of how it turns out, and see whether it pays or not. Then try "t'other way" and see how that turns out, and make a note of it.

CONVENTION NOTICES.

The Southern Illinois Bee-keepers' Convention is to be held in Duquoin, Thursday, October 1, 1885. Every one that has bees is invited to attend. New officers are to be elected. F. H. KENNEDY, Sec.

WM. LITTLE Pres.

The Progressive Bee-keepers' Association of Western Illinois will meet in Macomb, Ill., on Thursday, Oct. 15, 1885. Let everybody come and have a good time. Good speakers are expected.

J. G. NORTON, Sec.

The Wabash County Bee-keepers' Convention will meet in G. A. R. Hall, North Manchester, Ind., Oct. 10, 1885. All bee-keepers are earnestly requested to be present. J. J. MARTIN, Sec.

Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they want to dispose of, we will insert notices free of charge, as below. We do this because there is hardly value enough in these queens to pay for buying them up and keeping them in stock; and yet it is oftentimes quite an accommodation to those who can not afford higher-priced ones.

I have 3 or 4 prolific Italian hybrid queens at 50¢ each. I will take extracted honey or foundation for some, or money. C. L. HILL, Dennison, O.

If any one wishes them, I will sell 25 or 30 black queens at 25¢ each. W. T. LYONS, Decherd, Franklin Co., Tenn.

I have a number of hybrid queens which I will sell for 40¢ each, or three for \$1.00, if ordered at one time. JAMES P. STERRITT, Sheakleyville, Mercer Co., Pa.

I have a lot of black and hybrid queens for sale. Hybrids, 30¢; blacks, 20¢; large, young, and prolific; will send by return mail, and guarantee safe arrival. J. A. BUCKLEW, Clarke, Ohio.

Ten fine Italian queens, reared this season, and purely mated, by return mail, for \$5.00. We are uniting our nuclei, and must dispose of them.

GEO. W. & S. H. FOTMER, Independence, Kenton Co., Ky.

100 COLONIES OF BEES FOR SALE.

L. C. WOODMAN, Grand Rapids, Mich.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column.

DADANT'S FOUNDATION

is asserted by hundreds of practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sag, most regular in color, evenest, and neatest, of any that is made.

It is kept for sale by Messrs. A. H. Newman, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; F. L. Dougherty, Indianapolis, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Ezra Baer, Dixon, Lee Co., Ill.; E. S. Armstrong, Jerseyville, Illinois; Arthur Todd, Germantown, Philadelphia, Pa.; E. Kretschmer, Coburg, Iowa; Elbert F. Smith, Smyrna, N. Y.; C. T. Dale, Mortonsville, Ky.; Clark Johnson & Son, Covington, Ky.; King, Aspinwall & Co., 16 Thomas St., New York City; C. A. Graves, Birmingham, O.; M. J. Dickason, Hiawatha, Kan.; J. W. Porter, Charlottesville, Albemarle Co., Va.; E. R. Newcomb, Pleasant Valley, Dutchess Co., N. Y., and numerous other dealers.

Write for samples free, and price list of supplies, accompanied with 150 Complimentary and unsolicited testimonials, from as many bee-keepers, in 1883. We guarantee every inch of our foundation equal to sample in every respect.

CHAS. DADANT & SON,
Hamilton, Hancock Co., Illinois.

51tdf



The best Queens out.

I will furnish queens from July 1 to September 1 for one dollar; warranted tested, \$2.00; after then the price will be the same as in A. I. Root's list. Queens all bred from an imported mother.

G. F. SMITH,
Bald Mt., Lackawanna Co., Pa.

16tdf

FOR SALE.

20 Colonies of Pure Italian Bees in Langstroth frames, straight pretty combs, with honey, in DOUBLE-WALL OBSERVATORY HIVES; Been used two seasons with one-pound boxes, and for extracting. Complete on board cars, for \$8.00 per colony, or \$14.00 for the lot.

JAMES CRAIG,
MT. MERIDIAN, VA.

16 17 18d

For Sale. Six full colonies of bees in L. hives, on frames of wired foundation, \$8.00 each. They are strong, and have black and hybrid queens. I guarantee safe arrival.

IRA D. ALDERMAN, TAYLOR BRIDGE, SAMPSON CO., N. C.

ORDERS ALL FILLED.

We have a fine lot of queens now ready to ship. We claim to have the brightest yellow Italian bees in America. T. S. HALL, Kirby's Creek, Ala. 16-17d

PRICES REDUCED!

Until further notice I will furnish untested Italian queens at 80c. each; 6 for \$4.50. Warranted queens, 90c. each; 6 for \$5.00. All queens bred from my choice improved stock, and the cells built in full strong colonies. Safe arrival and satisfaction always guaranteed.

J. P. MOORE,
MORGAN, PENDELTON CO., KY.

17d

BEE-HIVES, : SECTIONS, HONEY - BOXES, ETC. GREAT REDUCTION.

All Dealers and large consumers will find it to their interest to write us for special stocking-up prices, either for present or future delivery. 16tdf

G. B. LEWIS & CO., WATERTOWN, WIS.

Wanted. A competent man to conduct an apiary, also a poultry ranche. Address with reference, L. A. FITZPATRICK, Hyde Park, Phillips Co., Ark. 16-19db

HUTCHINSON'S ADVERTISEMENT.

We are now making a specialty of rearing fine Italian queens. All queens are bred from the purest and best of mothers, and the cells built in full colonies. We have one of A. I. Root's very best, selected, tested, imported queens, also quite a number of very superior home-bred queens from the apiary of "Cynla Linswik." Besides this we have our own original stock which was built up from Dadant imported stock and from queens obtained from several of our best breeders. We are not trying to see how cheaply we can rear queens, but how good ones we can furnish. No queens will be sent out that would not be used in the home apiary. Single queen, \$1.00; six for \$5.00; twelve or more, 75 cts. each. Tested queens, \$2.00 each. Full colonies, \$5.00 each. Make money orders payable at Flint. Address

W. Z. HUTCHINSON,
15tdf Rogersville, Genesee Co., Mich.

THE A B C OF CARP CULTURE

JUST ISSUED.

A COMPLETE TREATISE Upon the Food Carp and its Culture.

INCLUDING PLANS AND SPECIFICATIONS, AND FULL-EST INSTRUCTIONS FOR THE CONSTRUCTION OF PONDS, AND EVERY THING PERTAINING TO THE BUSINESS OF RAISING CARP FOR FOOD.

By MILTON P. PEIRCE,

Secretary of the American Car. Cultural Association.

Illustrated by Many Fine Engravings,

With a Copious Index.

PRICE 45 CTS.; BY MAIL, 50 CTS.

A. I. ROOT, MEDINA, OHIO.

Italian



During Sept., \$1, warranted pure; 6 for \$5. Tested, \$1.50; selected, \$2. Price List free.

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HONEY COLUMN.

CITY MARKETS.

CINCINNATI.—*Honey.*—No change has taken place in the general feature of the market. Demand is slow for extracted honey, with an abundance on the market. Depression in other branches of business, and low prices, have their bearing upon honey. Better prices will, in my estimation, not be obtained until a general revival of business takes place; our most ardent desires to the contrary notwithstanding. Custom has to be made, even at the short crop of this season. Small lots only of new comb honey make their appearance, and are sold readily, but demand is slow in proportion. Extracted honey brings 46¢ on arrival, and choice comb honey 15¢ 16¢ in a jobbing way.

Beeswax is in fair demand, and arrivals are good. We pay 20¢-24¢ for good yellow.

The following explanation in regard to markets seems to be necessary in order to post some of our bee-keeping friends, and save them from disappointment. When quoting prices "on arrival" I mean to say that honey will bring about the price quoted, or that a figure within the range given will appear reasonable or acceptable to a purchaser. I quote, as near as possible, the prices at which I am buying and selling. I do not mean to say that purchasers are waiting for the arrival of honey, and are anxious to buy at those prices quoted, nor that I am willing to pay those prices on arrival for all the honey that may be shipped here. This latter would require a larger capital than I and two more of the largest dealers in America possess. It is unpleasant for us to be overrun with honey for which I will not pay on arrival, unless agreement has been made previous to shipment.

CHAS. F. MUTH,

S. E. Cor. Freeman and Central Avenues,
Sept. 12, 1885. Cincinnati, O.

NEW YORK.—*Honey.*—There is very little change to note in the honey market since our last, except more activity. New crop comb honey is arriving quite freely, and selling readily at following prices:

Fancy white clover, 1-lb. sections, per lb.	14¢ 15¢
" " 2-lb. "	12¢ 13¢
Fair to good 1 and 2 lb. "	10¢ 11¢
Fancy buckwheat, 1-lb. "	11¢ 12¢
" " 2-lb. "	9¢ 10¢
Extracted white clover, "	6¢ 7¢
" buckwheat, "	5¢ 6¢

Sept. 8, 1885. McCaul & Hildreth Bros.,
34 Hudson St., cor. Duane St., N. Y.

DETROIT.—*Honey.*—The market is improving; good honey is bringing 17¢ 18¢. A. B. WEED,

Sept. 11, 1885. 407 Woodward Ave., Detroit, Mich.

BOSTON.—*Honey.*—Best white 1-lb. sections, 15¢ 18¢; 2 lbs., 14¢ 15¢; extracted, very low at any price. *Beeswax*, 25¢ 30¢. BLAKE & RIPLEY,

Sept. 11, 1885. 57 Chatham St., Boston, Mass.

CLEVELAND.—*Honey.*—The market at present is pretty well supplied with new honey by neighboring apiarists from wagons, which makes the demand from our stores rather light. The price of 14¢ 15¢ per lb. for best white 1-lb. sections is well maintained, however, and we may look for better sales in the future, particularly if the clouds of dull times, which are predicted to be breaking, leave the commercial horizon bright and clear before long. Extracted, 6 to 7¢. *Beeswax*, 22¢. A. C. KENDEL,

Sept. 10, 1885. 115 Ontario St., Cleveland, O.

CHICAGO.—*Honey.*—Market is quite good for this season of the year; receipts are heavier, and sales also larger than at last writing; 15¢ 16¢ per lb. is the price obtainable at present for comb honey of best style and quality. Extracted, 5¢ 8¢. *Beeswax*, 21¢. R. A. BURNETT,

Sept. 10, 1885. 161 So. Water St., Chicago, Ill.

ST. LOUIS.—*Honey.*—Our market continues quiet, a small demand for extracted in barrels; 46¢ 47¢ for Southern. New white clover in cans, retail, 85¢ 90¢. Comb honey, some light inquiry for white clover, choice, 16¢ 17¢ retail. *Beeswax*—very dull; stock large, 21¢ 22¢. W. T. ANDERSON & Co.,

Sept. 10, 1885. 104 N. Third St., St. Louis, Mo.

MILWAUKEE.—*Honey.*—New honey not very plentiful. Demand good. Extracted, quick sale at 8¢ per lb. Comb, 1 and 2 lb. sections, white, 15¢ 17¢; dark, 12¢ 14¢. A. V. BISHOP,

Sept. 10. 112 W. Water St., Milwaukee, Wis.

WANTED.—500 lbs. comb and 1000 lbs. extracted honey. I will pay cash, 14¢ for comb and 7¢ for extracted. Honey must be delivered here in good shape; must be all clover or basswood; comb may be in any size of section less than 2 lbs.; all well filled, sealed, and straight. Extracted must be thick. OLIVER FOSTER, Mt. Vernon, Iowa.

WANTED.—Extracted basswood honey, in lots convenient to handle (100-lb. lots preferred).

J. G. LEHDE, Gardenville, Erie Co., N. Y.

FOR SALE.—2000 lbs. of white-clover honey (extracted), in barrels. I will deliver it on cars at Ionia, on the C. M. & St. P. R. R., or at Nashua, on the I. C. R. R., at 7 cts. per lb., net.

HENRY L. ROUSE, Ionia, Iowa.

FOR SALE.—4 barrels of fine linn extracted honey, ripe, and of the best quality, seven cents per lb., delivered on board cars here.

J. B. MURRAY, Ada, Hardin Co., Ohio.

Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they want to dispose of, we will insert notices free of charge, as below. We do this because there is hardly value enough to these queens to pay for buying them up and keeping them in stock, and yet it is oftentimes quite an accommodation to those who can not afford higher-priced ones.

I have 15 prolific hybrid queens to dispose of, at 25¢ each, in stamps; 5 for one dollar.

W. A. SANDERS, Oak Bower, Hart Co., Ga.

I have 8 hybrid queens, this year, 2 nearly black, others choice queens; \$2.25 for the lot, and safe arrival guaranteed; 3 for \$1.00. Who wants them?
B. F. CARROLL, Dresden, Texas.

Ten fine large yellow hybrid queens, six weeks old, bred from pure Italian mothers, which I have taken from a neighbor's apiary, at 25¢ each; five dark, at 15¢ each, ready to go by first mail. Safe arrival. F. H. SCATTERGOOD, Winona, O.

I have several black and hybrid queens that I will sell at 25 and 35¢ respectively. Safe arrival guaranteed. J. H. GINDLING,

Ohlman, Montgomery Co., Ill.

DADANT'S FOUNDATION FACTORY, Wholesale and retail. See advertisement in another column. 30th Ed.

FOR SALE.—60 colonies of bees, will sell cheap. Address THOS. E. SMITH, Luna Landing, Chioct Co., Ark.

DADANT'S FOUNDATION

is asserted by hundreds of practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sag, most regular in color, evenest, and neatest, of any that is made.

It is kept for sale by Messrs. A. H. Newman, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; F. L. Dougherty, Indianapolis, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Ezra Baer, Dixon, Lee Co., Ill.; E. S. Armstrong, Jerseyville, Illinois; Arthur Todd, Germantown, Philadelphia, Pa.; E. Kretschmer, Coburg, Iowa; Elbert F. Smith, Smyrna, N. Y.; C. T. Dale, Mortonsville, Ky.; Clark Johnson & Son, Covington, Ky.; King, Aspinwall & Co., 16 Thomas St., New York City; C. A. Graves, Birmingham, O.; M. J. Dickson, Hiawatha, Kan.; J. W. Porter, Charlottesville, Albemarle Co., Va.; E. R. Newcomb, Pleasant Valley, Dutchess Co., N. Y., and numerous other dealers.

Write for samples free, and price list of supplies, accompanied with 150 Complimentary and unsolicited testimonials, from as many bee-keepers, in 1883. We guarantee every inch of our foundation equal to sample in every respect.

3btfd **CHAS. DADANT & SON,**
Hamilton, Hancock Co., Illinois.

SECTIONS.

Western headquarters for bee-men's supplies. Four-piece sections, and hives of every kind, a specialty. Flory's corner-clamps, etc. Orders for sections and clamps filled in a few hours' notice. Send for sample and prices.

9 20db **M. R. MADARY,**
Box 172. Fresno City, Cal.

VANDERVORT COMB FOUNDATION MILLS.

Send for samples and reduced price list.
2tfdb **JNO. VANDERVORT,** Laceyville, Pa.

72 Colonies of Bees For Sale.

I will sell the above number of colonies of bees on very reasonable terms. They will have plenty of honey to winter on, and are in good condition otherwise; are in 12-frame hives, with about the same capacity of a 10-frame Simplicity. Correspondence solicited.

17-19db **H. F. BARGAR,**
Border Plains, Webster Co., Iowa.

TRY THE BELLINZONA ITALIANS,



And see for yourself that they are the best. Warranted Queens, bred from mothers imported direct from the mountains of Italy, \$1.00 each; 6 for \$5.00. Special discount on large orders. Satisfaction guaranteed. Send for circular. Orders filled promptly.

15tfdb **CHAS. D. DUVALL,**
SPENCERVILLE, MONT. CO., MD.

BEE-HIVES, ∴ SECTIONS,

**HONEY - BOXES, ETC.
GREAT REDUCTION.**

All Dealers and large consumers will find it to their interest to write us for special stocking-up prices, either for present or future delivery. 16tfdb

G. B. LEWIS & CO., WATERTOWN, WIS.

Wanted. A competent man to conduct an apiary, also a poultry ranche. Address with reference, **L. A. FITZPATRICK,** Hyde Park, Phillips Co., Ark.
16-19db

HONEY AND BEESWAX.

We are now in the market, and will be during the entire season, for all honey offered us, in any quantity, shape, or condition, just so it is pure. We will sell on commission, charging 5 per cent; or if a sample is sent us, we will make the best cash offer the general market will afford. We will handle beeswax the same way, and can furnish bee-men in quantities, crude or refined, at lowest market prices. Our junior member in this department, Mr. Jerome Twichell, has full charge, which insures prompt and careful attention in all its details.

Sample of comb honey must be a full case, representing a fair average of the lot. On such sample we will make prompt returns, whether we buy or not.

15 2db **CLEMONS, CLOON & CO.,**
Kansas City, Mo.

GET THE BEST BEE-BOOK.

The third edition of **The Bee-Keeper's Handy Book** contains 300 pages and 100 fine illustrations, also a likeness of Rev. L. L. Langstroth, and the late Moses Quinby, two of the most noted bee-keepers of the world. Two hundred pages of this work are devoted to practical bee-keeping, and 100 pages to the best and simplest methods for rearing queens. Mr. Langstroth says this work is the "best authority on queen-rearing," and J. E. Pond says, "It is the best bee-book published in the English language." Send for prospectus. **HENRY ALLEY,** Wrenham, Mass.

QUEENS AT REDUCED PRICES.

Owing to the scarcity of money I will sell my warranted Italian Queens at \$8.00 per dozen; two dozen for \$15.00.

18tfdb **J. T. WILSON,**
NICHOLASVILLE, KY.

RASPBERRY TIPS FOR SALE.

I have Raspberry tips for sale at \$9.00 per 1000, of Gregg, Tyler, Souhegan, and Cuthbert varieties.
18td **L. C. WOODMAN,** GRAND RAPIDS, MICH.

For Sale Cheap.

My place, consisting of one 2-story frame house, one two-story shop, 4 lots in one inclosure, 14 bearing fruit-trees, 10 swarms fine Italian bees, one 6-horse-power engine, and saws for hive-making. Price \$1200. For particulars, address
18 19db **J. W. HART, L. E.,** EUREKA SPRINGS, ARE.

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WEEKLY, \$1.00 PER YEAR.

D. A. Jones & Co., Publishers, Beeton, Ont., Can.

The only bee journal printed in Canada, and containing much valuable and interesting matter each week from the pens of leading Canadian and United States bee-keepers. Sample copy sent free on receipt of address. Printed on nice toned paper, and in a nice shape for binding, making in one year a volume of 832 pages. 9tfb

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column.

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No. 18.

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SECRETION; WHAT IS IT?

HOW AND WHERE DO THE BEES GET WAX?

A. J. COOK:—Please answer this in GLEANINGS: Do bees digest honey, or do they manufacture honey into wax? Please explain it plainly, as there are parties here who do not agree with your theory in your Manual. I have one, but it is one of the old edition.

J. W. BITTENBENDER.

Knoxville, Iowa, Aug. 13, 1885.

Answer by Prof. Cook.

The question of Mr. Bittenbender's serves admirably as a text for an article which I have long desired to write for GLEANINGS, but for lack of time have deferred till now. I wish to consider the relation of nectar to honey and to the food of larval bees, the relation of honey to wax as secreted by bees, and the relation of the sap of trees to the nectar which is secreted by their flowers or other glandular extra-floral cells.

Secretion, whether of saliva or spittle, in our own salivary glands, whether of milk by any of the mammals, or whether of wax by bees, is always accomplished by cells specially developed for the purpose. These cells may be just blind sacks of protoplasm, as the nectar-glands of plants, or they may be cells conducting to tubes when, as in case of our salivary glands, or the glands in the head and thorax of bees (see Manual, p. 87), they are called racemose glands, from their resemblance to a bunch of grapes. It is the function of these glandular cells to take elements from some nutritive fluid, like the sap of plants or the blood of animals, and from some other substance—the secretion—not found in the blood, or in the sap, as the case may be. A se-

cretion, then, is not a substance simply eliminated from sap or blood; it is a new substance formed from the sap or blood, which, in the economy of the individual, shall be of some service. Thus our spittle or milk is not in the blood. The elements are there, but the spittle and milk are products of the glands, made from elements taken from the blood. So, too, the nectar of flowers, or plant-glands, is not in the sap of the plants, but is made by the gland-cells from elements in the sap. True it is, that these cells will sometimes eliminate foreign substances—may be toxic substances—which are in the blood. For instance, we may feed a cow poison, and find the poison in the milk. The poison is no part of the milk; but the glands, like good Samaritans, quickly spring to the aid of the purely eliminating organs, the lungs and kidneys, in the removal of the harmful substance of the blood.

In case of the poisonous honey discussed in GLEANINGS, I said I did not think it possessed the properties of the sap. First, the nectar is a secretion, and so is made from the sap, but is not the sap. True, the glands might remove a poisonous element in the sap, possibly—as animal glands do upon occasion—but this is not likely, as the poison is not hurtful to the plant, but a normal substance, and there is no occasion for its removal. Again, this poison is always in the sap, yet we have not heard of this honey as poisonous before—not till this year. Plants are in like condition every year, and do not by accident get poison as do animals, which may need elimination. I think it far more likely that the bees got some real poison from other sources; or possibly good honey was a poison to

the persons afflicted, as all honey seems to be poison to some people. "What is one person's meat is another person's poison."

Only a few years ago I received honey from New York State which poisoned several persons, yet we have not heard of any similar poisoning since. It is more than likely that what was true in one case was also true in the other.

To answer the question as to wax. Bees take honey as food. This is digested and absorbed, when it becomes blood, which is the nutritive fluid of the bee, but is not honey, and quite likely contains no honey for the most if not all the time. From this blood the wax-glands secrete the wax scales. Thus the wax of the bee has the same relation to the honey eaten by the bee, that the cow's milk has to the hay which she eats. As stated in all the last editions of my "Bee-Keeper's Guide," from the eighth thousand to the thirteenth thousand inclusive, nectar and honey are not the same. We feed cane sugar to bees, and we get honey sugar, which is quite different in the comb-cells. So nectar is largely cane sugar, and is neutral, while the honey is a different sugar, and is acid. Thus we may say that honey is digested nectar, which is fitted in such digestion to be absorbed and assimilated. Recent experiments have shown that, when we eat cane sugar, it is digested in our stomachs, and in this act converted into a sugar like, if not identical, with honey sugar, whereby it is fitted for absorption and assimilation. Thus we have reason to believe that honey is the best form of sugar, as here the bees have done what otherwise our own digestive energies must have performed.

It is quite likely that honey sugar is most like liver sugar, and that both are widely removed from corn glucose, though all give the same chemical reaction with the copper salts. This view of the superior excellence of honey as a food, gives new force to the commendation, "A land flowing with milk and honey."

Again, bees feed a creamy substance to the larval bees. This substance contains not only oxygen, carbon, and hydrogen, the only elements of pure honey or sugar, but also nitrogen. This last the bees get from the pollen, which must surely be present to rear brood. True honey may contain a little pollen; but to rear any considerable amount of brood, pollen must be present in greater quantities—stored in the cells. This honey and pollen is very perfectly digested by the bees, and so is fitted for absorption, else it would be useless, as the larval bee is not fitted to digest. It is not known whether the digestive juices that produce this change are all formed in the stomach or not. Quite likely the large glands in the head and thorax may aid. This is a question difficult of solution, but will doubtless one day be solved.

A. J. Cook.

Agricultural College, Lansing, Mich.

I have always supposed that the wax secretion in the body of the bee was formed in a similar way to the formation of tallow and lard and fatty matter, in the bodies of our domestic animals. They eat grass, hay, and grain. The nutritive properties of these different kinds of food go into the blood. When all the different functions of the animal are properly performed, there is a residue of a very rich concentrated substance. This substance accumulates as fat. In the body of the bee the process is the same, only

that these flakes exude so as to come out between the scales composing the bee's body. They are not identical in composition with lard and tallow, but they are in many respects similar. With the bee it seems to be a provision of nature—a substance just exactly right to build the cells of the honey-comb. Sometimes these wax scales stick out in such protuberances that they curl up. A few days ago a friend sent us a bee by mail, asking what sort of a fungoid growth it was that was sticking out of and adhering to the bodies of many of his bees. There was no trouble at all, of course. His bees were simply secreting unusual quantities of wax. When we feed sugar heavily in the fall, to get the bees ready for wintering, they often secrete such quantities of pearly-white wax scales that they fall to the bottom of the hive in the form of a dust, and under the microscope they look much like fish-scales. Of course, there must be a waste when this happens; for it doubtless requires a good many pounds of sugar to make one pound of this white wax, just as it requires a good many pounds of corn to make one pound of beautiful white leaves of lard in the body of a hog.

PROCEEDINGS OF THE OHIO STATE BEE-KEEPERS' ASSOCIATION.

REPORTED BY G. F. WILLIAMS.

IN giving this report it may be well to announce that, as the regular secretary did not make his appearance nor send any of the papers from the last meeting, we were unable to produce any minutes of said meeting, or even get a copy of the constitution and by-laws. Friend Williams was requested to act as secretary until the regular secretary should appear; but as said officer did not appear at all, the following report is entirely from Mr. Williams:

The bee-keepers of Ohio met, as previously announced, at the State Fair-grounds, and assembled at 9:30 Thursday morning, in room over Avorian Hall. A. I. Root, Pres., called the meeting to order.

Dr. Besse introduced the subject of

BEES TRESPASSING.

and cited the case of a Wisconsin farmer who had brought suit against a bee keeper whose bees, he claimed, trespassed on his clover fields. The doctor said, "I don't think bees ever trespass. I think it preposterous for a man to sue for bees trespassing. Bees are an advantage to all farmers, by assisting nature in the fertilization of flowers."

C. E. Jones.—I never had any complaint, and think them a blessing.

A. I. Root.—In my opinion, nothing can be made out of the case.

Secretary.—In our town a neighbor complains of bees trespassing in the kitchens, and of eating their grapes.

A. Benedict.—People think bees puncture grapes; but this is a mistake. They work on grapes after wasps, and other insects having strong mandibles, puncture them. They never injure sound fruit.

President.—We have several hundred grapevines right over our hives, and our grapes are never injured by the bees.

Dr. Besse.—Bees will never injure the tender Delaware grape, unless the skin is first ruptured. Bees are a benefit to corn-growers.

A. Benedict.—After grapes are bursted they soon rot any way, and might the bees not as well get the sweet from it as to let it waste? Bees are a benefit to all fruit-growers.

Dr. Besse.—Fruit-growers ought to be thankful

for the bees. If there were no bees there would be little fruit.

President.—A Massachusetts fruit-man once compelled a bee-keeper to remove, because he claimed that his bees injured his fruit. A trial of several seasons without the bees was a failure, and the bee-keeper was prevailed upon to come back.

CIDER - MILLS.

Mr. Benedict.—I am satisfied that cider-mills injure bees.

Dr. Besse (who seems to always take the opposite side, in order to draw out all points).—Cider-mills are a good thing for bee-keepers in killing off some of our bees, so that they do not go into winter quarters too strong.

C. E. Jones.—I lost 73 colonies, which had plenty of clover honey; cider carried in killed them; had better spent \$100 in screening the mill.

President.—As a means of harmony I suggest that bee-keepers furnish some kind of screen to keep out the bees. We furnished one for a neighbor cider-maker which kept out flies, etc., as well as bees, and cost only \$2.00.

E. R. Root moved that the President appoint a committee to see that a suitable building be erected by the Agricultural Society of the State on the new fair-ground, for the use of bee-keepers, as a place of exhibition and meeting. Seconded and carried.

Dr. Besse, Delaware, chairman; *C. E. Jones*, Delaware; *Aaron Benedict*, Bennington, were appointed the committee.

Next was proposed the subject of having the Ohio Agricultural College take up Apiculture as a branch of study. The President said he thought the college ought to take such measures, and that it would elevate bee culture in our State.

Dr. Besse moved that a committee be appointed to confer with the directors of the Agricultural College, to have a station of bee culture established there. Seconded and carried. *Ques.*—What is to be the object of this department?

Dr. Besse.—The object is to test for best bees, best methods of management, to report from time to time, and to educate students in bee culture.

Committee appointed were—*Dr. Besse*, chairman; *J. W. Newlove*, *W. Oldroyd*, *Dr. Mason*, *A. I. Root*, *Chas. Muth*, *Dan White*.

Perhaps I might mention here, that before returning home I had a conversation with some of the friends at the Agricultural College, in regard to the above matter, and they declared that it is out of the question to take up any thing more just now, without more funds and more intelligent helpers. There are already too many things started that amount to nothing, because of the lack in the direction above mentioned; or, to put it briefly, "too many irons in the fire" as it is. I am not competent at present to say just what needs to be done. But it seems to me there is no reason why we should be behind the State of Michigan, or any State, for that matter.

WHAT IS THE PROPER SIZE OF A COLONY TO START IN WINTER QUARTERS?

Dr. Besse.—I think too many bees do not winter as well as a small colony.

A. Benedict.—I can not quite agree with *Dr. Besse*. I want a large colony of bees; a small one will eat much more honey in proportion to its size than a large one, to keep up animal heat.

C. E. Jones.—My experience in this: Get a colony in as nearly a natural condition as possible, large, and plenty of honey.

HOW MANY BEES ARE NECESSARY FOR SUCH A COLONY?

Dr. Besse.—About 3 lbs.

A. Benedict.—I winter out of doors.

Dr. B.—I winter in the cellar.

Mrs. Culp.—I don't care for such large colonies. I don't stimulate in the fall; am satisfied small colonies are the best. I winter in chaff hives, and stimulate in the spring.

Dr. Besse.—Winter half the bees, and extract and sell half the honey.

President.—*Dr. Besse* and *Mrs. Culp* may be right, but I think there ought to be caution used here in the use of terms. A large colony will sometimes

contract in cool weather to the size of a popcorn ball, and winter well.

Dr. Besse.—If you stimulate in fall, feed early enough so that young bees can have two or three flights before they cluster for winter.

WHEN WOULD YOU FEED?

Dr. Besse.—Any time—the sooner the better.

President.—We have the best results by feeding gradually. Feed, say, $\frac{1}{2}$ lb. every night; feed during September if possible.

Mrs. Culp.—I think my plan of setting away full combs, and giving them in the fall, the best plan.

Dr. Besse.—We should throw out the uncapped honey before going into winter quarters.

HOW MANY COMBS OF HONEY ARE NECESSARY TO WINTER A COLONY?

Dr. Besse.—Twenty-five lbs. of honey.

President.—Five full combs.

POOR SEASONS.

President.—Bee-men are complaining of a poor season. I should like to inquire if it is the fault of the season or the apiarian.

Dr. Besse.—May be the fault of the supply-de-der(?). You should make $\frac{1}{2}$ -inch space for bees between sections; bees will then go up sooner.

C. E. Jones.—Don't put on too many sections in a moderate season at one time.

WHERE IS THE BEST HONEY LOCALITY IN THE U. S.?

Answers—Central Ohio; California in a good season; Florida; basswood locality of Wisconsin and Michigan.

Dr. Besse.—Ohio extracted and comb honey, taken by me to the exposition at New Orleans, took the first premium.

A. Stanger.—Hardin Co. is as good as any county in the State, for honey.

Mrs. Culp.—Franklin Co. is a good locality. I tested one colony, and took 252 lbs. extracted honey.

Adjourned to 2 P. M.

HOW MANY COLONIES CAN BE KEPT IN ONE LOCALITY?

President.—That depends on circumstances.

AFTERNOON SESSION.

The subject of

MOVING BEES DURING THE WORKING SEASON

was first taken up.

Dr. Besse.—Move five or six swarms every evening. After bees are all in the hive, set the hives far enough apart to set others between them when moved next evening. Set a board, or three or four sticks of stave-wood, in front of the colony moved. I moved 100 colonies 250 or 300 ft., and very few bees, if any, went back. They were caught in a nucleus hive on the old stand. I would advise moving strongest first, then the returning bees would reinforce the weaker ones left.

A. Benedict.—When setting bees out of cellar, be sure to put hive on old stand.

Mr. Gordon, M. D., Mt. Vernon.—I have no trouble in moving bees short distances, and I don't think it makes any difference whether we set bees on old stand when taken out of cellar or not.

Mrs. Culp.—I set my bees further apart last fall, and saw no bad result. I was trying to see if I could make them do as I wanted, and I did.

Dr. Gordon.—I winter my bees out of doors, with corn-fodder placed around them, leaving an opening on south side, so the bees can fly on warm days. I move them together and set them on scantling two tiers high.

Mr. Morris, Fayette Co.—I wintered my bees in a bee-house for three years, successfully. I never set out of doors for a fly when quiet. The house has a brick foundation, double wall, 1 ft. space filled with sawdust; 1 ft. sawdust on top, cement floor.

President.—In regard to cellar wintering, there is a diversity of opinion and experience. Chaff hives seem to be the most practicable, with the variable winter weather we have in Ohio, and public opinion seems to be getting in favor of them.

A. Benedict.—Bees need more ventilation in winter than in summer.

President.—Our practice is to leave the entrance open full width all winter.

Mr. Goodrich.—I prefer cellar wintering; keep bees as near the freezing-point as possible, and think it best.

Dan White.—I think the cellar, with an experienced hand, the best place to winter, although I winter

in chaff hives out of doors. I lost half my bees last winter.

C. E. Jones.—The cellar is a good place to winter, if properly prepared.

President.—The cause of last winter's losses was poor stores and severe weather.

WHAT IS THE CAUSE AND CURE OF SPRING DOWDLING?

Mr. Morris.—Our spring losses were caused by there being too few young bees when we went into winter quarters.

Dan White.—The cure is plenty of young bees. *President.*—There is some mystery about spring dwindling. A colony dwindling seems to get discouraged, and will not even gather pollen. I am sometimes inclined to think it a disease of some kind, and may be contagious, affecting whole apiaries, and missing others in the same locality. A disastrous winter is a benefit, in one way, by making a demand for bees and honey.

IS SORGHUM INJURIOUS TO BEES?

President.—Yes, it is a dangerous winter food.

Mr. Morris.—Will bees degenerate by in-breeding?

C. E. Jones.—We had better introduce new blood.

President.—I don't think there is any danger of any harm arising from in-breeding.

WHO USES SEPARATORS?

Dr. Besse.—I don't, and think it is better without them.

Secretary.—I have abandoned them. To get the nicest and straightest combs, use 1½-inch sections; such a section, 4½×4½, will hold a pound, and you can have as many rows of sections as you have brood-frames—the frames being spaced 1½ inches; reverse your sections.

A. Benedict.—I use 1½-inch sections with no separators.

It seemed to be generally understood that we could all dispense with separators by using narrower sections.

Adjourned to meet in Sec. Chamberlain's office, in State House, at 7 o'clock.

EVENING SESSION.

The question was asked, Which is preferable, natural swarming or division?

Dr. Besse.—Divide them. I would rather divide three than five one natural swarm. By division you have complete control of the bees. I raise early queens from best stock. Get early drones by inserting a drone comb in the center of full colony. When a colony indicates swarming I divide, putting old queen on new stand and new queen on old stand.

C. E. Jones.—I am in favor of natural swarming. I also raised early queens. I make two swarms out of a large one. I think it more natural for them to swarm.

Secretary.—I let my bees swarm naturally, or I divide them, according to the circumstances and conditions of a colony at the time. No general rule can be laid down. It may be best to divide one, and best to leave another to swarm. You must learn to determine by experience. I clip my queens.

Mr. Pierson.—I prefer natural swarms. I clip my queens also.

President.—Where you desire increase, divide. If you wish honey and no increase, let them swarm if you can't help it.

Wm. Oldroyd described how he took a swarm out of a very high tree, which led to a discussion on hiving swarms.

Mr. Benedict.—I would smoke a swarm down from a high limb by tying burning rags to a piece of iron fastened to a long pole, or I would use a swarming-box. I believe in artificial swarming, and I don't believe in it. I divide by the "drumming" process, which is the most natural. The bees thus swarmed are filled with honey; and as a swarm takes about 6 lbs. of honey with them, this gives them a start. I put the old queen on the new stand, and run the new queen in the other part. In 15 days I can drum again. By putting in the new queen I always have the hive full of bees.

Dr. Besse.—Bees usually alight on low bushes.

Wm. Oldroyd.—That is not my experience.

Dr. Besse.—To have a high swarm I would shake the bees off on a pole, to which a caged queen is fastened.

C. E. Jones.—In swarming time I watch my bees closely. I can tell within 10 minutes of the time when a swarm is going to come out. Bees generally alight low. I take the swarms from a limb in a

swarming-basket with a spring lid. I generally catch swarms in a basket just as they are coming out. If two or three swarms alight together, dump them on a sheet; catch the queens, and divide equally as nearly as possible.

HOW CAN WE TELL WHEN A COLONY IS GOING TO SWARM?

Ans.—By the commotion in the hive and in front of it. I use a hive with glass on the sides.

A. Benedict.—I separate my swarms with my smoke-pole, holding it near the swarm already settled, which will prevent others from settling.

President.—We used to keep a caged queen to catch swarms, as stated by Dr. B.

Secretary.—Mr. Ed. Miller, a neighbor bee-man, who is a carpenter by trade, and who is away from home during the day, clips his queens, and during the swarming season sticks a stout bush, with some branches on, a few bees in front of each hive, in the ground. When a swarm comes out his "better half" catches the queen, cages her, and fastens the cage in the bush. The bees settle on the bush, and at noon or in evening, after work, Mr. M. hives them.

Adjourned to meet at fair ground, Friday morning at 9 o'clock.

FRIDAY MORNING SESSION.

In the absence of the President, Mr. Benedict acted as chairman.

HOW CAN WE GET THE MOST HONEY?

Mrs. Culp.—I get more than twice as much extracted honey as comb honey, by putting in empty frames.

Secretary.—Last season I had a large number of sections filled with empty comb, and I believe it was due to this fact that I had my good yield of comb honey this season. I think if we can always manage so as to get our sections filled with comb we can get as much comb as extracted honey.

Mr. Benedict.—We advise beginners to go slow in extracting, and learn the business, or they may produce bad results, and get discouraged. I use a movable bottom-hive, and tier up in extracting. If the colony swarms, I have it on foundation combs under the old colony, placing a wire cloth between the two for a day or two. The queen begins to occupy lower story; and as the bees hatch out above, the honey is stored in the frames. By this method I get a large body of bees at work in a single hive.

Mrs. Culp.—My practice is similar to that described by Bro. Benedict.

A. Benedict.—In working for comb honey I use the same method of keeping my colonies strong by hiving back the swarm. If I have swarms by themselves, I take a section-rack from the old hive and put it on a new one.

Dr. Besse.—How soon do you extract after putting swarm back?

Ans.—In two or three days, or as often as necessary—whenever honey is partly capped.

Dr. Besse.—This, in my experience, won't work well. If you extract next day, the queen will go up and occupy frames, and bees will build drone-comb below. I have no particular method of working for extracted honey. I usually extract from brood-chamber as soon as queen gets crowded. I tier up two or three stories high; always let bees cap about two-thirds of my honey before extracting. Bees work downward; put empty hive under full one.

A. Benedict.—In tiering up section cases, always put an empty one beneath a full one.

The convention then adjourned, to meet some time in January.

STATE FAIR EXHIBITS, AND NAME TO WHOM PREMIUMS WERE GIVEN.

There was on exhibition by a number of bee-keepers, honey, both extracted and comb, some very fine bees and fixtures, and implements of all kinds. Mr. Goodrich exhibited a nice lot of comb honey, one-pound sections put up in small shipping-cases, also a very fine display of extracted honey put up in many different styles. He received first premium on comb honey, first on general display of comb and extracted, second on extracted.

Mrs. Culp exhibited some very fine wax, on which she took first premium.

Dr. Besse's display of extracted honey was very fine—the nicest display we ever saw. He took first premium on extracted honey.

C. E. Jones took second premium on display of comb honey, and first premium on full colony and manipulation of same.

Brigham and Clayburn exhibited some fine comb honey, and took first premium on single crate of honey.

Aaron Benedict exhibited some of the finest Italians we ever saw, and we have seen and examined many strains since we have been a bee-keeper.

Earl Clickinger also exhibited a fine nucleus.

NAME AND RESIDENCE OF SOME OF THE PARTIES IN ATTENDANCE, WITH TABULATED REPORT OF THE SEASON.

Names and Post-Office Address.	Colonies now in	hives in Sept. 1st.	Swarm (Ct.)	Lib. Honey.	Lib. Euc. Honey.	The Season.
H. D. Vanscoik, Covington, Miami Co.	60	28	500	40	Good.	
B. F. Myers, Mt. Cory, Hancock Co.	75	22	100	0	Good.	
A. S. Goodrich, Worthington, Del. Co.	75	75	100	500	Poor.	
Geo. Allen, Jeffersonville, Fay Co.	4	5	0	0	Poor.	
Dan White, New London, Huron Co.	146	68	0	6000	Good.	
A. Benedict, Bennington, Morrow Co.	31	38	0	0	Poor.	
S. R. Morris, Bloomington, Fay Co.	12	1	0	0	Poor.	
J. Miller, Thionville, Perry Co.	25	19	0	0	Poor.	
E. Clickinger, Columbus, Frank Co.	75	17	100	0	Poor.	
W. Shepherd, Rochester, Lorain Co.	15	5	50	200	Good.	
M. L. Carnean, Bucyrus, Cass Co.	4	1	0	0	Good.	
Genie Culp, Columbus, Franklin Co.	1	1	0	0	Poor.	
A. Riechenbacher, Talamo, Frank Co.	49	32	10	0	Poor.	
A. Graftin, Bremen, Fairfield Co.	68	0	0	0	Poor.	
B. Helphrey, Utica, Licking Co.	25	19	0	0	Poor.	
Dr. Besser, Delaware, Del. Co.	140	100	500	0	Poor.	
C. E. Jones, Delaware, Del. Co.	30	15	175	50	Poor.	
J. W. Newlove, Columbus, Frank Co.	17	11	50	0	Poor.	
W. Artry, Franklin Square, Col. Co.	25	17	0	0	Poor.	

* Queen-breeder.

† Not yet taken.

EXTRACTED HONEY.

How to Produce an Extra-Fine Article.

FRIEND HEDDON IS TAKING THE MATTER IN HAND.

FRRIEND ROOT:—In visiting bee-keepers, I find that very few of our brothers know how or are willing to take the pains to produce a *nice* article of well-ripened basswood honey. It took me years to learn how to take and keep it in a perfect state, like comb honey. I wish every bee-keeper in America could sample my ten tons of basswood and clover honey. I am selling to a large number of producers, and about every one of them sends me a testimonial. I should like to send you a 100-lb. keg of such basswood honey as I think would build up a large demand for extracted honey, if *all* who raise it would produce a "dead ripe" article, and take the proper care of it. If you say so, I will send you by freight a 50 or 100 lb. keg, such as I am selling at 8 cts. per lb., F. O. B., and keg thrown in, and you may credit me just what you think it is worth, to be traded out with you in supplies, and I will then write an article, if you wish, giving directions how to raise it, and keep it thus perfect. That is, in my opinion, one of the "keys" to enlarging the demand for our product. JAMES HEDDON.

Dowagiac, Mich., Sept. 7, 1885.

Friend H., you have got right hold of one of the most important points, in my judgment, now before us, and I am inclined to think you are master of the situation, judging from the quality of the honey sent us last season. I am well aware that this letter and your forthcoming article will probably be good advertisements for you; but you ought to have a good advertisement. Besides, we expect to advertise honey for anybody so long as he produces a good article at a fair price. While reading your letter I recalled to mind the amount of paper that we used up a few years ago in arguing the respective merits of comb and extracted honey. Offering a fine article of extracted honey, in 50-lb. kegs at 8 cts. per lb., is worth

more than all the arguments that could be put into a large book. Send me a 100-lb. keg, and a 50-lb. keg. I want to see what they look like, each size, and I will pay you the same price for them that the other people do; and send along your article as well.

INTRODUCING VIRGIN QUEENS FIVE AND SIX DAYS OLD.

HOW FRIEND GOOD DOES IT SUCCESSFULLY.

I SEND you by this mail the kind of cage I use; and, by the way, it is a good cage for introducing any kind of a queen. I use the Alley method for obtaining cells. With his method we get nice straight cells. I leave the cells in the hive until the queens commence gnawing out, then I cut them out and daub honey on the end of the cells. If that is omitted, many of the queens will starve before they eat out. Then I put the cells in the wooden part of the cage, put the end of the cell through the hole that opens into the wire cage, shut the lid to the cage, and lay the cages in a queen-nursery or on top of frames of a strong colony. I now keep watch of them; and as fast as the queens hatch I remove the cells and fill the wooden part of the cage with the Good candy. The cages can now be laid on top of the frame of any strong colony until they are wanted, and there is no danger of their starvation, even if the bees do not feed them. Now, when the queens are five or six days old (and if they are eight or ten it matters not), I introduce them to nuclei or full colonies, as the case may be. Where they have been queenless for four days, simply swing the lid half way round, so as to give the bees access to the candy, and shove the cage down between two combs, and let the bees eat out the candy, and liberate the queen; and, as a general thing, I have a laying queen in five or six days.

This and last season I had about 100 of the cages in use, and I know whereof I speak. I think many make mistakes in trying to introduce to colonies that have not been queenless long enough.

Nappance, Ind., Sept. 3, 1885.

I. R. Good.

I will explain to our readers, that friend Good's cage consists, first, of a little elliptical-shaped box, something like an old-fashioned pill-box. It is made from a piece of $\frac{1}{2}$ -inch board with a half-inch hole bored through the center. This hole is covered on one side with a thin strip of wood, having a hole in the center large enough to let the lower end of a queen-cell pass through. The other cover has a wire nail at one end, allowing it to swing around to put in the cell, or fill the cavity with candy. Now, attached to the side where the point of the queen-cell is to come through is a little bag of wire cloth. This bag is made in such shape that it will go down between a couple of combs readily. There is something new in this arrangement. You wait until the cells are almost ready to hatch, and then when the newly hatched queen is seen to be down in the wire-cloth box, the cell is removed, and its place filled with Good candy. She is now among the bees of a good colony, and she has plenty of candy where she can get it, but the bees can not get it away from her. No doubt a virgin queen from five to ten days old could by this means be introduced to a colony that

had been three or four days queenless, and she would be ready to take her wedding-flight as soon as she is out. From what experience I have had with bees, I should think that there would be quite a good many losses, unless the one who had them in charge had by experience learned just how to manage every little minute point, as friend Good doubtless has.

FRIEND SHUCK'S REVERSIBLE HONEY-BOARD.

ALSO SOMETHING IN REGARD TO HIS REVERSIBLE HIVE.

FRRIEND ROOT:—Bro. Heddon's experience reminds me of my efforts to get comb honey in the brood-chamber of the hive some years ago, by dividing a large brood-nest with cases of sections. I invariably got queen-cells in all, except the division occupied by the old queen.

I have raised queen-cells in an upper story when the lower story was occupied by a laying queen. Ordinarily the cells are larger, and the queens of better color, when thus produced. The cells must, of course, be removed for the final emerging and perfecting of the queens.

More than one queen may occupy the same hive by keeping queen-excluders between them. The excluder must divide the entrance so that the occasional passing of a queen around it is prevented. Aside from the fact that the bees occupy the hive and surplus apartment in common, this is simply a modification of the tenement hive idea. After all, this is a question of arithmetic: A good queen will occupy just about so much space, whether in a hive by herself, or along with another queen.

I send you to-day a sample of my skeleton board, such as I use and sell with my invertible hives. The spaces are readily cleared with a piece of steel, the proper size. I like them for excluding queens when a swarm is hived, as the swarm can immediately go into the sections, and leave the queen upon the brood-combs. Also if a colony is stubborn about going above, I put the sections *under* the hive, with the skeleton board between; or, rather, turn the whole apparatus upside down, when the bees will be *obliged* to go into the sections.

This board may be modified by extending the metal strips on one end, and thus form a queen-excluding division-board when it is desired to keep more than one queen at liberty in the brood-chamber of the hives.

I first took the idea of this board from the Quinby five-piece honey-board, which I used until sections were introduced, when I adapted it to the use of them. Mr. Heddon's board is a different thing entirely. He cleats it all around so as to get his bee-space between it and the sections. I have my bee-spaces in the hive-body and in the section cases themselves.

If I ever want a drone and queen catcher, I shall get the Alley trap, unless some one invents a better one. Bees well managed do not swarm much. Colonies run for comb honey should not swarm to exceed ten per cent. If run for extracted honey, not more than five per cent; so there is little use for queen-clippers and queen-catchers. However, if I had a valuable queen which I dreaded to lose, I

should lose no time in getting a queen or drone trap.

J. M. SHUCK.
Des Moines, Iowa, Aug. 4, 1885.

Thanks for the honey-board, friend S., and also for the facts you give us. I will explain to our readers, that this honey-board is made of slats of pine, $\frac{1}{4}$ inch wide, kept at the right distance apart for excluding queens and drones, by a folded strip of galvanized iron tacked across each end. Your idea of inverting the hive so as to bring this queen-excluding honey-board, sections and all, under the hive, is a novel one. You will notice that it is in a line with friend Heddon's recent experiments. Your letter is dated Aug. 4, but it may have been written before friend Heddon's article.

CRYSTALLIZED HONEY-DEW.

FRIEND COOK GIVES US SOME ADDITIONAL INFORMATION.

IN answer to our request, which see on page 586, Prof. Cook sends us the following in regard to the crystallized honey-dew:

Yes, friend Root, and you may add my thanks for such a mine of sweet, and that, too, from lice, it is good to see. In every case the source of the honey-dew—lice secretion were more appropriate—is found to be aphides, or plant-lice. Surely our friend need not condemn such nectar. I am sure the honey from Oregon will lose nothing of its reputation if the nectar is always as sweet and wholesome as this.

As you know, Mr. Editor, the great crystallized masses, large as the end of one's finger, were not only very sweet, but were very pleasant. The lice on the fireweed were of the genus *Aphis*, as shown by the long nectar-tubes, or nectaries. Those on the fir were of the genus *Sachnus*. These must have secreted an immense amount of nectar, to show so much cane sugar. It is a good thing for the sugar-manufactories that these lice are not very common, or the former would have to go out of the business. Just to think of a single twig, less than six inches long, having more than a table-spoonful of fine sugar on it, and that all crystallized and refined, with no care or labor! As I have always observed, the sweet secretion of these plant-lice is always pleasant and harmless, and I do not believe it will ever be any detriment to honey. We can not say the same of that from bark or scale lice, for that is bitter and distasteful to bees and to us. I say distasteful to bees, for I have noticed that bees will treat bark-lice nectar as they do glucose,—leave it entirely alone if they can get nectar from any other source. This is not true of aphid nectar, which attracts bees even at the very time that the incomparable basswood and clover secretion, or nectar, is abundant.

As Mr. R. suggests, honey-dew does not fall. So-called honey-dew is almost always secretion from insects. It may come from fungi, as shown last year to be true of the ergot; it may come from extra-floral glands, like those of the cow-pea, illustrated in my *MANUAL*. I think no apology need be spoken for this plant-louse nectar. It will never harm the honey.

A. J. COOK.
Agricultural College, Mich., Sept. 3, 1885.

MORE NOTES AND COMMENTS.

THE ADVANTAGES OF A PERMANENT HOME.

NOW I do envy those people who can always stay put! I am as fond of a pleasant home, lawn, shrubbery, flowers, trees, fish-ponds, cranberry meadows, grape-tries, and strawberry-patches—well, as the Editor of GLEANINGS himself—which is saying a great deal. But these things are inconsistent with moving about much, and I have had considerable of this to do in the course of my life, especially of late years. Since my last article appeared in GLEANINGS, I have moved once more. Why do the Scotch call a change of residence "flitting"? It is a much slower affair than a "flit." The worst part of moving is getting things to rights, and settling down to regular habits again. During this interval of interruption, several matters have come up in GLEANINGS on which I wish to say something; and as I must try to squeeze them into one article, I adopt a similar heading to my last, and call these *more* "Notes and Comments."

A PLEA IN FAVOR OF WINTERING ON SUMMER STANDS.

I want to speak a good word in behalf of friend Reed, of Milford, Wis., whose letter appeared in GLEANINGS of May 15th. I ordered two of those very cheap stocks of bees advertised by him, and found them, on arrival, exactly as represented by him. Some things in a letter from him touched me very much. He said he had cherished the ambition of getting up a first-class apiary, but had been obliged to give up through ill health. An old complaint had been brought back by the exertion put forth in carrying his bees out of the cellar. This is one argument, and by no means a slight one, in favor of outdoor wintering. In the past, when I practiced cellar wintering, carrying out my hives in spring generally brought on an attack of lumbago, and I never kept more than 20 or 25 stocks. Let us not commend bee-keeping as an occupation suited for invalids or weakly persons until we give up the folly of cellar wintering. Had friend Reed wintered on the summer stands, probably he might have been able to continue his much-loved pursuit. Anyhow, I am sure he has the sympathy of all his fellow bee-keepers, and the prayers of many that his affliction may prove for the best.

CLIPPING QUEENS' WINGS.

By the way, friend Reed has almost converted me to clipping queens' wings, which he practiced. Having to go from home for a few days, June 10th, I carefully searched for queen-cells on the morning of my departure. I was away longer than I expected, and felt pretty anxious about the bees. On returning, my wife said to me, "Some of your bees have had a great fight." I examined the hives, but found no evidence of a fight." Next day, as I was busy writing, my wife said, "Those bees are fighting again." I sallied forth and found the bees not fighting but swarming, out of one of friend Reed's hives. The bees whirled around in the air, but did not alight. So I suspected the queen was not with them, and, on searching, soon found her crawling on the ground. Then I saw what I had not noticed on looking through the hives, that one wing was clipped. I felt pretty cheap; for one argument I have used against clipping is, that it disfigures the queen. However, I picked her up, put her under a tumbler, moved the old hive, set an empty one in

its place, and soon the swarm came back. I ran in the queen, and the whole thing was over in a quarter of the time usually taken in hiving a swarm. I am hard to convert; but undoubtedly I should have lost that swarm if the queen's wing had not been clipped; and now the question is, "to clip or not to clip." One curious thing about the affair is, that the hive is up on a stand two feet above the ground. So on the previous occasion, when they tried to swarm, her majesty must have crawled up one of the legs of the stand, in order to get back into the hive.

HIVES.

GLEANINGS has had a great deal to say about hives of late. Well, I have tried many—so much the worse for my peace and comfort, and I am settling down on some form of Simplicity. The one you make has many excellent features, and the movable bottom-board just suits my hibernation theory. The Heddon style, too, I like; but that lath honey-board seems to operate as somewhat of a barrier to the bees ascending to the honey-boxes. Friend Lake, of Baltimore, makes some hives with valuable features. His No. 2, especially, is a capital hive, convenient to handle, and a good wintering hive. The Falcon hive, made by W. T. Falconer, of Jamestown, N. Y., is the neatest, nicest, and best-finished form of Simplicity I have seen. It has one feature that is especially good in the working season when the hives are overflowing with bees, and that is a removable side. It comes out readily, and is never fastened with propolis, because there is a division-board and chaff-filled frame between the side and the brood-nest. When these are taken out there is plenty of room to manipulate the frames. I suppose we can not get all valuable features combined in any one hive. I wish we could. But can not all makers of Simplicity or Langstroth frames agree on the exact size of frame to be used? I have had more trouble with frames varying just a little in size, than any one thing in my apiary. You want to change frames from hive to hive for various purposes, and it is most provoking to find one a little too long, and another a little too short. The trouble is mainly with the top-bar.

WIRED FRAMES.

Both last season and the present I have tried wired frames. I find that the bees nibble round the wire in some cases, and work away for a good while before they accept the situation, and I can not see that there is any particular need of this wire, for I have just as pretty frames of comb as can be produced, built on foundation simply hung from the top-bars. So far, not a single sheet so hung has fallen. I think, however, that in large apiaries where it is necessary to prepare a lot of hives in winter there might be trouble about this sheet getting loose, for extreme cold seems to make the wax very dry and less adhesive. But, can not some cute inventor give us a frame in halves, which, going together and binding all four edges of the sheet of foundation, will secure straightness and firmness, and render reversible frames entirely unnecessary? I have no inventive faculty or I would try.

EXPRESS COMPANIES.

I got a nucleus the other day from Dr. Tinker, containing a frame of brood, a pound of bees, and one of his Syrio-Albino queens. When I came to open the box I found the brood-comb broken down, many of the bees killed, and among them the queen. The package was admirably put up, and such a dis-

aster as befel it could have been caused only by a fall from the express wagon, or a violent concussion of some kind. There is no excuse for this kind of thing, and it is time a lesson were taught express companies in regard to careful handling of bees. I have had several losses, due to culpable negligence on their part, during my experience as a bee-keeper, but never got any redress. Generally a complaint has drawn out the threat of refusing to convey bees at all. I think somebody will have to enter action for damages, before due care is taken. No one likes to do this. The loss is usually not very large, and the risk of losing costs in an action hinders taking steps for a legal redress. It seems to me that this is one of the directions in which a National League might bring pressure to bear.

WM. F. CLARKE.

Guelph, Ont., Can., July 15, 1885.

In regard to clipping queens' wings, friend C., it turned out very well in your case; but I don't believe a queen *often* comes back, especially where she has to climb up to a hive that stands on legs.—In regard to hives, I have seen so many changes that never "came to stay," that of late I am getting quite backward indeed in regard to adopting any fixture, or any thing that seems to be an improvement, until it has stood the test of use. The Simplicity hive and the chaff hive both seem to settle back to the original plan, about once in so often; that is, things that we at one time thought would be a great improvement are, sooner or later, dropped as too much machinery, or too much bother, and we have left, as before, a plain simple hive without any loose fixtures.—Why, friend C., you yourself give the best reason in the world for having frames wired, but yet you don't seem to see it at all. Had Dr. Tinker had that one frame of brood built on wires as we have them, it would have been almost impossible for even an *express* official to have smashed it up.—A word in regard to express companies. When we first began to ship bees we had troubles from combs breaking down, bees dead, and honey running out of the hive, etc. We brought a bill to the express company, and they paid it. Finally another bill was brought in, amounting to something like \$20.00. They paid that too; but they then declared that hereafter it must be distinctly understood that they are not to be responsible for damages done the bees; that is, they could not stand such losses. They admitted that may be their employees were careless, but they got the best they could, paid good wages, and got along very well with most kinds of merchandise. After studying the matter over a good deal, it occurred to me that there were two sides to this question. One side is, that the express companies ought to employ agents who would handle fragile things carefully. Because they get pay for so doing, it is their business. If we should want to send a basket of eggs by express, or an expensive vase, or a piece of statuary, it is the express companies' business to handle it so carefully that no harm could come. If they did not, they must pay damages. This course of action promised endless quarrels, lawsuits, and other unpleasant things in life. Do you want to know what the other side was that presented itself to me? It was this: Em-

ploy packers so well trained that they could pack a sitting of eggs, an expensive vase, or any thing else, in such a way that it could be tumbled from one end of the room to the other, without injury. It might be a hard matter to do it with the eggs, but with the vase there is no difficulty at all; and, in fact, almost every thing we ship we have learned by experience *can* be so put up that there is very little danger of harm, with such handling as express companies ordinarily give things they carry. We have adopted the latter plan, and we have got along pleasantly with express and railroad companies, and with almost everybody else. Isn't it the better way, to take the world as you find it—that is, within the bounds of reason, and adapt yourself to the world? Of course, there are extremes, such as the following: In loading a half-barrel of honey, one of the railroad employes let it drop. The agent promptly informed me of the circumstances, and asked me to help them out of a bad job, and the money was handed over at once. At another time a cask of beeswax was broken open and a quantity abstracted. The railroad company objected to paying the claim. But their agent, who was a personal friend of mine, wrote to the company something like this: "Mr. Root does a large amount of business with us, as you may know, and I take pleasure in saying that he makes comparatively few complaints. I think his claim ought to be honored." In response to this, the money was handed over at once.—Just one more thought in regard to wired frames. I know the bees do sometimes, when there is a dearth of honey, gnaw the wax away from along the wires; but when put into the hive during a good yield, the wires are very quickly covered and out of sight; and as soon as one set of brood is reared over the wires they are never molested afterward.

WHERE DID THE EGG COME FROM?

DO BEES STEAL EGGS FROM OTHER COLONIES?

THE condition of the colony was such as to preclude the possibility of its containing an undeveloped egg. In the first place, a swarm was thrown off June 12th, and as soon as queen-cells were old enough all but one or two were taken out and used to queen other colonies. On the 25th of June a second swarm was thrown off. The hive was examined, and a young queen removed, and the swarm ran back. On the 29th the queen was still on deck; but a close examination failed to discover any eggs. On the 8th of July no queen could be found, no eggs in the hive, no unsealed brood, and very little sealed, and that was in a comb that had been used in exchange with another hive, the exchange being made about June 20th, to get queen-cells for the other colony.

Now, suppose this comb had been full of eggs (which was not the case, as the colony it came from had been queenless for three or four days), is it at all probable that any egg in it at that time would have remained undeveloped till the 8th of July, at which time the colony was found to be queenless, and had started queen-cells, in one of which was an egg? Not expecting to find any thing in the cell,

which was about half length, I pulled it down, and, to my great surprise, in the bottom I discovered the egg; and while I still held the frame in my hands it was removed. What was done with it I am unable to say, as I gave the colony a hatching queen-cell on the 10th, placing it between the top-bars, not lifting any frame out. Is it unreasonable to suppose, that, while I had frames out of some other hive, an enterprising bee, instead of stealing a load of honey, helped himself to an egg, and carried it home, and caused more rejoicing there than would a whole frame of honey? I think not.

Quincy, Ill., July 16, 1885.

JAMES KNOX.

Friend K., I presume it is possible for worker-bees to steal an egg in the way you suggest, or in some other way, although I can hardly think it is probable. Cases have been mentioned, quite a number of them, where it was at least very hard to explain where the egg came from, unless it was stolen in some such way.

BUILDING UP NUCLEI TO FULL COLONIES IN THE FALL.

EXPERIENCE OF A NOVICE IN THE MATTER.

I AM glad that I am again taking GLEANINGS, having been without it a year and a half. I subscribed for it in 1883, and thought one year would be all that I should probably want it; but not so. The first number, Aug. 15, has been received, and the first article in it is worth the one dollar to me, if you keep it up in the next issues till you give us one good letter—in detail—on building up nuclei to full colonies. That is just the business I am at now. I am willing to put down some of my experience, and let it go for what it is worth; and I should be glad to read reports from others; but I shall not be satisfied till I see an article from a bee-man of experience.

The first week in July I received and commenced feeding a two-frame nucleus with Italian queen, and, I presume, one pound of bees. There was but little brood in the combs. I fed awhile with candy, then put in one frame of foundation, and fed about half a pound of sugar syrup each day. As soon as one frame of fdn. was nearly drawn out and filled with eggs, I inserted another. Soon I fed 1 pound of sugar. The second and third frames of fdn. were drawn out and filled with eggs in less time than the fourth and fifth. It seems to me I did not get as good work from the bees (in comparison) when I was feeding one pound of sugar as when I fed half a pound. I was trying to get the best hive of bees at the least expense. At this date this is a good colony, strong enough to winter all right in Ohio, if it have 25 lbs. of syrup. I tried black bees as above, and they did not draw out the fdn., except just enough to store the syrup in it. It did not pay to feed black bees; but all my Italian nuclei have done well, and are still doing so.

L. W. GRAY.

Troy, Orange Co., Fla., Aug. 26, 1885.

Thank you, friend G., for your kind and approving words. I think you are on the right track, and I should say you are doing quite well. I think your one experiment with the nucleus of black bees was hardly a fair test, for I am sure they can be worked the same way as Italians; but I am also sure that, as a rule, the Italians would far

outstrip them. Twenty-five pounds of sugar, fed at this date, ought to make an excellent colony, with abundance of stores, until fruit-bloom next season.

SOMETHING MORE ON THE SAME SUBJECT.

Please give me a little information in regard to bees. First, I have an opportunity of buying some swarms now, for \$2.00 per hive—the old square box hive. Now, then, I can wait until next May or June, and buy all the young swarms the party has, for \$1.00 per swarm, I furnishing the hive. The party hires the bees and puts them into any kind of a hive I may take to him. Now, Mr. R., I come to you for advice: which must I do? I am a young beginner in the bee business. Shall I buy the old hive, or wait and get the young swarms, putting them in hives that I can handle?

WHITEWASHING HIVES.

Do you think it advisable to whitewash bee-hives? The hives are ready made, but the lumber was never dressed, and is still in the rough. I can also have the Langstroth hive cut out with the lumber dressed, ready to nail together, for only 40 cts. apiece. Is that too much, or is it cheap? J. O. BARNES.

Hickman, Fulton Co., Ky., Aug. 27, 1885.

Why, my young friend, I should think you had a splendid chance to build up an apiary, at a very small expense. If I wanted to build up an apiary, I would take box-hive swarms now at this price, say five or ten, according to my means, and then I should be ready to take all the new swarms that can be bought at a dollar a swarm next year, putting them, of course, into modern hives.—I would not whitewash bee-hives. It looks unsightly, and is but little more protection than nothing. It adds to the appearance for only a little time; and when the whitewash is partly worn off, it seems to me they are far more unsightly than plain wooden hives without any attempt at either paint or whitewash. Whitewash holds better on rough boards than on planed boards, but you can not make a good serviceable hive of unplanned lumber very well. If you can get the stuff in the flat, cut accurately, for 40 cts. apiece, I should say it was very reasonable.

A GOOD-NATURED PROTEST FROM A FRIEND IN ALABAMA.

"FIRST CAST OUT THE BEAM OUT OF THINE OWN EYE."

ON page 566 you tell Bertie Norrell that you are afraid she is a little severe on her neighbors who work in the factory. I agree with you. Although my wife's grandfather was a native of Rhode Island, I know nothing at all of the moral and social status of the "factory folks" of New England, and very little, I admit, of Southern "factory folks," yet I think it hardly charitable to dub either "an illiterate, oily, unwashed class;" for might not some combination of circumstances, such as bereavement, poverty, etc., induce a lady—north or south—who had seen other and better days, to accept factory work as the best employment available, and as being far better than becoming dependent upon others, or allowing herself and family to suffer? I have heard of such cases, and I doubt not their existence.

In regard to snuff-dipping, I think the practice is becoming a thing of the past, though too much of it still exists; and among our colored people the habit prevails extensively. I can not say, of course, how much has fallen under our fair friend's observation; but when she casts a slur upon the good name of Alabama, and the "nicer class of ladies of Central Alabama" in particular, I am *hurt*, and must protest. That is where I *live*, and I have a mother, sisters, and wife, to say nothing of scores of relatives and friends belonging, I suppose, to our friend's "nicer class," who do not now, never did, and never will use tobacco, as snuff or otherwise. There are a few, very few, individual exceptions to be found in this class—usually an old lady who contracted the habit years and years ago, and who has not the fortitude or powers of physical endurance to break it off, and who usually makes no secret of it. Our young Georgia friend has evidently been misinformed, or has enjoyed (?) a very limited observation of us. Supposing, however, that it was all true, and more too, why should she so eloquently hold up to the world the faults and moral deformities of *others*? And you, old friend, had you not better "look out," or you will again feel as you did when writing the foot-note to friend W. F. Clarke's communication on page 376. Now, if the sentiment that prompted that foot-note condemns *this* communication, I'll try to be content. While it does not pertain to bees, I *believe* it will be heartily indorsed by your Southern subscribers, and not objectionable to others. It is simply an effort to right a wrong; and if Central Alabama, my home, had not been particularized, I would not have said a word.

2—J. M. JENKINS, 30—43.

Wetumpka, Ala., Aug. 24, 1885.

Friend J., I humbly beg pardon. I ought not to have allowed that sentence to appear in print; but I did it mainly that I might say a word of caution to the children about uncharitable speaking. I will try to be more careful hereafter. But we can all gather a moral from it as it is; that is, let us try to maintain the good standing of our respective States. Your communication has brought out this fact, which you all remember that I intimated—that tobacco-using among the ladies is mostly confined to those well along in years, and it is just so here in our State. You will remember that I mentioned, some time ago, that when I was obliged to stay a few hours in a strange town, of going from the station on account of the tobacco smoke, then to the dry-goods store; and, finding that worse still, I went to the hotel. As I found no relief there, they were obliged to put me in a room with the women-folks. In a little while I got into a good chat with quite an old lady, on the subject of religion; but before she could express herself to her notion, she was obliged to fish a pipe out of her pocket, and commence smoking. Now for all that, I believe her to be a real true Christian, and one of God's chosen ones. She was brought up in that way, and I would not think of asking her to put away her pipe in her old age, just because of the trifling inconvenience it gave me. We who are young and strong, ought to be ashamed of such things; and I think, too, we can unite in friendship and kindness in deciding to set the best example we know how, even if we

can't do more. May God bless your friends and relatives, friend J., and the inhabitants of your beautiful State of Alabama; for I know a little about it, even if I don't know very much.

CARP CULTURE COMPARED WITH BEE CULTURE.

FACTS ABOUT CARP IN GENERAL.

I THINK every man who has a suitable place should have a carp-pond as well as an apiary; in fact, I believe those who have tried both, find that there is as much profit, if not more, in carp culture than there is in bee culture; or, at least, I find such to be my experience, for I have made considerably more clear money in carp culture than in bee culture, though I am an A B C scholar in both. I will say, however, that I do not expect to make a specialty of either. I have two ponds. Both together cover about one-fourth of an acre of land. I stocked one of them in February, 1883, with only 28 carp, varying in length from $1\frac{1}{2}$ to four inches. In March, 1884, I drew down my water and found only 20 of them, being in length from ten to fourteen inches. The others, I presume, had been destroyed by mud-turtles, some of which I caught.

I sold eight carp to a neighbor, and two more afterward got destroyed, leaving only ten. I succeeded in raising about 150, which spawned about the middle of May last (they having spawned only one time during the season), which were from four to six inches long when I transferred them to my other pond, to stock it. I am confident that I had many more hatched out than were raised, for I could see them swimming on the top of the water in considerable numbers when they were about an inch long. I think that the frogs must have destroyed them, as they were very numerous about the pond. I intend making my ponds frog and turtle proof by setting posts all around, and planking to the posts, letting the bottom plank into the ground, and making close joints, until I raise it $3\frac{1}{2}$ or 4 feet high.

My ponds are ditched, or drained all round, to avoid being overflowed by hard rains. Ponds should be constructed, if possible, so as to have part of the bottom of mud or soft loamy earth; for in freezing weather the fish partially bury themselves in the mud. The rest of the bottom should be top earth, as it will produce more swamp grass, which the fish eat. In excavated ponds the feed is very nearly all supplied artificially, as but little natural food will spring up in such ponds. The depth of the water need not exceed $3\frac{1}{2}$ or 4 feet in this latitude, and only a small channel need be that deep, and the rest of the bottom should range from one to sixteen inches deep, as more grass will spring up and grow in shallow water; and besides, the sun will warm the water quicker, and the spawn will hatch better, than in deep water; in fact, those who have had experience in the business say that water may be so deep that it is doubtful whether the spawn will ever hatch.

My ten fish that are now in my brood-pond are 18 to 20 inches long, three of which are leather carp, the others scaly ones. They are two years old; some of my neighbors who have some three years old say they are from 24 to 26 inches long, and weigh from 14 to 16 lbs. The scaly carp seem to

have the preference for table use, but I think leather backs outgrow them. My fish will eat almost any kind of food that a hog will, such as cabbage, onion - tops, peaches, mulberries, blackberries, grapes, young tender wheat, oats, boiled corn, raw cow-peas (swelled), bread of all kinds, and, in fact, scraps of almost any thing, and even little pieces of dead forest-leaves, or trash, that floats on the top of the pond.

J. D. BROWN.

Bowman, Ga.

MY REFERENCE BOOK.

THE WAY IN WHICH FRIEND DOOLITTLE CLASSIFIES AND UTILIZES WHAT HE HAS READ AND CONSIDERED.

WHILE reading the bee-papers, it is generally to be noted that nearly all writers tell us about things which are past; this, put with the time it takes the article to get to the publisher, and the same to be placed in our hands through the mails, together with the printing, makes nearly every valuable article which we read a month or more behind the time most appropriate for its use. I am not finding fault with the correspondents of the bee-papers regarding this state of affairs, for it is quite natural that this should be so. There is no time a person feels more like telling what he has done, and how he did it, than just after doing it successfully. There is a certain inspiration on a person at such times which allows of their story being told better than it could possibly be at any other time after several months have passed away, as must always be the case where the story is kept so that it can appear before the public in its appropriate season. Thus it happens that all of the best articles on wintering have appeared in the spring; the best article on securing a large yield of honey after the honey harvest is over, and the same is true of nearly every other subject pertaining to bee culture. Now, our bee-papers are of value to us only in proportion as we remember and put in practice the valuable points they contain; and as my memory is not sufficient to keep track of all that is of value, appearing out of season, I must have some means of reminding me of the valuable points just when they are of use. Again, much of the matter in the bee-papers is of little value to the experienced bee-keeper, except to add a little to the "spice of life" by adding variety to our reading-matter.

There is only now and then an item or an article we wish to look at the second time, so what we want is some plan by which we can get at that which is really valuable when wanted at another time. To do this I struck on this plan: Whenever I sit down to read a fresh paper, I have a pencil with me; and when I find a new idea, or an old one I wish to further experiment with, I mark it. In some instances the marks will embrace a whole article, while others call attention to only a few lines. In future years, or at any time I wish to find that which is really valuable in my store of bee-literature, all I have to do is to read the marked passages, and thus get the cream of a whole year's numbers of GLEANINGS or other papers in a little time. Now, the above would be all that would be necessary, were it not for the matter of most articles being out of season, as spoken of at the beginning of this article, but for this reason I want some arrangement which will cite me to all the valuable points so that I can practice each

in its appropriate season. After further studying on the matter I decided on what I call a "Reference Book," which is simply a small blank book bound in leather. Any memorandum or account-book will answer the purpose, providing it has at least 24 leaves in it. This book I arrange similar to an assessor's book, which has the letters of the alphabet from A to Z on the outside margin of the leaves. Cut the leaves just as you would to letter them; but instead of lettering them, write on the little square of the first, "Jan. 1st;" on the second, "Jan. 15th;" on the third, "Feb. 1st," and so on, giving one leaf, or two pages, for each half-month, to the end of the year. Having the book thus fixed it is kept near the chair which I usually occupy when I read, together with a pencil, so that when I come to any passage, part of an article, or an entire article that I think will be of any service to me, either as something new that promises to be valuable, or some new plan of using something already familiar to me, I mark it with my pencil, and then jot it down in my book, under the date to which it is applicable. Thus I get all the matter which I consider valuable, contained in what I read regarding apiculture, arranged with reference to the time it is to be used, in this book.

When Jan. 1st arrives I look over all there is on this page, and, for instance, try fixing one of my saws so as to make it saw smoothly, as described on page 408 of GLEANINGS, by way of experiment, if I chance to find a note regarding that in this little book. To explain more fully: On page 533 I read how to cut up foundation by using kerosene oil and a butcher-knife, so that thirty or forty sheets can be cut at a time. As I had always used the Carlin wheel, or a stamp cutter like those used by D. A. Jones, for cutting my fdn. starters for sections, I thought this might be better, so the plan was marked. As the first half of May would be the time I would most likely want to use it, I turn to May 1st (by putting my thumb on that date when opening my reference book), and write GLEANINGS, 1885, page 533, "How to cut fdn." When this date (May 1st) arrives I look over all that is written there, and, as I come to this, I turn to page 533, and there is just what I want, at the right time; for in a day or two I must go to work cutting fdn. into starters for my sections. So I go to work and cut a part by the new way, and some by the old. If the new proves the more valuable I mark these words on my reference book with a star; or, if worthless, I draw my pencil across the whole line, thus crossing it off.

If I have made it plain, and I think I have, it will be seen that I have all the real worth of many volumes in this little book, while the matter which was worth only once reading is left out. Different persons would make different selections from what I should; but the plan is a good one, in my opinion, and one which will be of great service to any one who will follow it.

G. M. DOOLITTLE.

Borodino, N. Y., Sept., 1885.

Friend D., your suggestion is an excellent one. It was only the other day that I began to consider that it was almost impossible for me to remember, in time for action, what I had already learned. Somebody comes along and suggests a very decided improvement on what we are doing; and after thanking him for it I remember that I had read the same thing a long time before. but

had forgotten it. Now, your plan, if I understand it, is something like the monthly calendar, found in many books on bee culture, agriculture, etc. As each season comes in turn, you look at your reference book, to see what you had marked down to be done at such a season.

DRONE-EXCLUDERS.

Do we Want our Drones Caged Up, or do we Simply Want to Drive them Away?

FRIEND ALLEY CRITICISES THE SPAFFORD DRONE-EXCLUDER SOMEWHAT.

MR. SPAFFORD has described and illustrated a drone-excluder which he calls "better than Alley's." The arrangement as shown and described will no doubt work "like a charm"—a fact I discovered more than 25 years ago. The same device described by Mr. Spafford was exactly what I used in connection with my first drone-trap. But I did not only exclude the drones from the hive, but I caged all in a box as they came out to take a flight. From this came my drone and queen trap. Now, if friend Spafford will place a box at the end of the outlet of his excluder he will have the principle of my drone-trap complete. I do not use drone-excluders, and never did in my apiary. They are as useless a piece of furniture in the apiary as one can have. Of what benefit is it to exclude drones from a colony of bees? They return to enter the hive again when they have had a flight. If they can not enter some hive, they will block the entrance and interfere with the working bees. Unless excluders are placed at the entrance of each hive, the drones will soon find a home in some colony in the yard. When it can be done as well as not, why not exclude the drones and at the same time catch and destroy them? Every drone can be entrapped and destroyed with very little trouble to the apiarist; and by the use of the same device his bees can not swarm and abscond.

When I used the device as described by Mr. Spafford, I found the bees would soon gnaw the wood away, and the drones had no trouble in getting into the hive again. I used tin to prevent this, but it was a very unreliable way to manage and control drones in an apiary. As I have before stated, my drone-trap was not perfect until I obtained perforated zinc. As these traps are now constructed, every drone can be destroyed. Those we have made this season have shorter tubes through which the bees pass into the trap. I noticed, when watching the working of the traps, that some of the drones would get half way up the tube; the distance was so great that they would turn about and go back. I soon remedied this slight defect. Then, again, instead of nailing the zinc on the front of the trap, or letting it run in on grooves, I now cut the zinc so that it goes inside the ends of the trap, and the bottom edge runs about half way back toward the hive, thus forming an inclined plane over which the drones pass directly into the tube, and into the trap. As now made, I believe the trap is as perfect as it is possible to make them.

I do not see how any man can claim that the excluder of Mr. Spafford's is better than the one described by me in GLEANINGS some two years ago. The latter was exactly like Spafford's in principle,

and as it is so arranged that there is a chamber back of a piece of perforated zinc, it afforded plenty of ventilation to the hive. Let some one apply Spafford's drone-excluder to a strong colony during a hot day, and see what the effect will be. The colony can not possibly get proper ventilation by such an arrangement. This is not theory. I know from 25 years' experience what I am talking about.

Wenham, Mass., Aug. 25, 1885. HENRY ALLEY.

Thanks for your hints, friend A. With the years of experience you have had in this matter of getting rid of drones, no doubt you are right, in the main; but for all that, I think the Spafford implement will answer a very good purpose under many circumstances.

PREPARING THE BEES FOR THE HONEY SEASON.

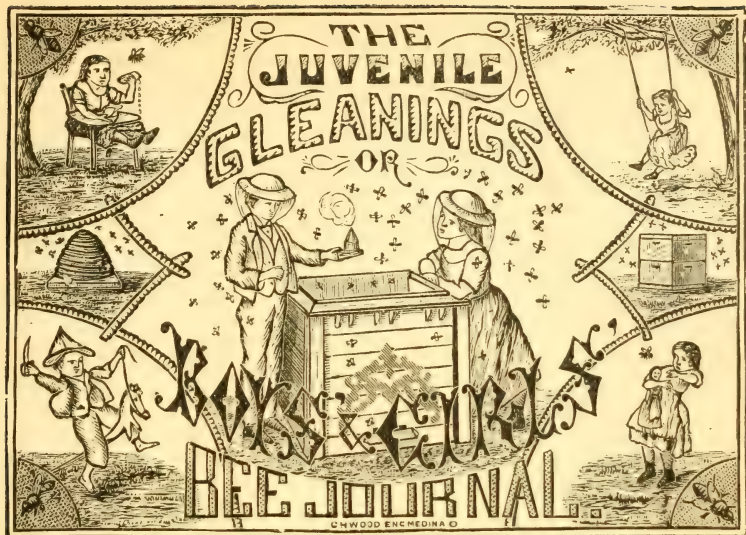
HOW I HAVE WORKED AND SUCCEEDED.

THE outlook for me this last April was splendid. My bees had wintered so well, comparatively (and I had learned, no matter how, how to make them build up in the spring) that I was just going to have my hives roaring with bees when white-clover harvest set in. I was not in the hurry I once was, to remove the winter packing. In some cases I put a frame outside of the division-board; in others I merely uncapped some of the honey occasionally, adding frames of stores as the latter became scarce. I had so many extra frames with more or less honey in them that I did not feed any syrup. I commenced by turning each alternate frame containing brood, end for end. As the bees begin rearing only at the front half of the frames, by this means the two or three frames containing brood would soon be full. Then I would spread the brood, inserting the frame containing none in between.

The above methods, I believe, stimulate brood-rearing as well as any kind of feeding. The area of brood increased so rapidly that early in May I began to remove a division-board in one side, and insert another frame. The methods pursued which, to me, were something of a trial, were succeeding admirably—at least, so it seemed for awhile. But now when clover is beginning to blossom, what is the final result? I am no better prepared for the harvest than I have ever been before. I might almost say that my hives are full of brood and empty of bees. I have not a dozen first-class stocks on the place, while there are no more bees in my 45 hives than there should be in 30. Do not tell me, please, that I have made some prodigious blunders. I think I know where I made some mistakes. The spring has been cold and backward. The different fruits bloomed about a week later than usual. Next spring, however, may be entirely different, and my plan may work well as pursued this season. After all, then, what have I proved? Neither that to stimulate brood-rearing in the spring *will* or *will not* build up. With two or three exceptions my bees showed but slight traces of dysentery, so they could not have been weakened from that cause.

Mechanicsburg, Ill. GEO. F. ROBBINS, 39—15.

I should say, friend R., that your spreading and changing ends with the brood did more harm in the end than it did good. May be if you had waited until the season was a little further along, however, it might have turned out differently.



He that is faithful in that which is least, is faithful also in much. — LUKE 16:10.

MYSELF AND MY NEIGHBORS.

And Abram said unto Lot, Let there be no strife, I pray thee, between me and thee, and between my herdmen and thy herdmen; for we be brethren.

— GEN. 13:8.

I BELIEVE I have told you something about our honey-wagon that we send around our town every day. Our population is only somewhere about 2000, so that by taking one-half of the town one day, and the other half the next, we go to almost every house every two days. Well, while we are carrying honey around to the houses, we could just as well take something else; and as market gardening is a sort of kindred industry, we have been taking celery, summer squashes, melons, cucumbers, and lettuce, besides fruits, such as apples, pears, peaches, huckleberries, etc. The undertaking was rather a novelty in our town, and it first occasioned considerable remark. Many prophesied that it would not pay expenses, etc. I rather thought it would pay expenses in time, because it is a convenience and saving of time to the people of a town of this size, to have such things delivered right at their doors. It saves them carrying heavy market baskets; it gives them the products of the soil fresh from the ground, and they can see the things before buying, and can buy or not, as they choose. The opposition that at first arose soon gave away, as I expected it would, and eventually the market wagon began to be regarded as a convenience instead of an innovation.

Many of my new enterprises oftentimes make me feel badly before I get them thoroughly established, because they sometimes interfere more or less with other people's business. But this field I regarded as almost unoccupied; and I have for ten years

past felt a longing to open such an industry in our town, because it seemed to need it badly. During the past winter our grocers received from Cleveland many barrels of lettuce, which was sold for as much as 25 cents per pound in winter. Considerable quantities of other early garden stuff were daily brought in by express, during the latter part of winter and early spring. Think of the idea, of an agricultural people sending to the great cities for garden stuff which they could easily raise at their doors, with the aid of a little greenhouse, a few cold frames, and things of that sort! Well, I thought this time I had got a field that was so nearly unoccupied it would harm no one. I found out my mistake, however; for one Saturday evening an old neighbor, whom I had known for years, and who had been most of that time a particular friend of mine, came to see me. I saw by his looks that something was amiss, but could not think what it was, until he commenced as follows:

"Mr. Root, I want you to give me and my boys something to do."

"Why, my good friend, we have nothing for our regular hands to do scarcely; and to keep them busy until another season opens for bee-supplies, we have been making garden, and doing almost every thing we could find to do."

"Well, then I think I had better start a saloon, for a man must do something for a living."

"But, neighbor —, why do you come to me with this announcement? Why am I under obligation to furnish you and your boys work?"

"Well, Mr. Root, it seems to me it is plain enough why you are to blame, when things have got to such a pass that you load up a

wagon full of garden stuff, and send three men around the little town of Medina to peddle it out."

It was all plain enough to me then; and for the first time I remembered that the neighbor before me had for many years been a gardener. His work was principally in vegetables and flowers, however. I remonstrated; but he was somewhat excited, and very positive in his view of the matter. It was true, that we had, during this day, sent out two men, and a boy to drive, for we had quite a quantity of stuff on hand; and as the next day was Sunday, we made a trip both in the forenoon and afternoon. He declared he would have to start a saloon to support his family, unless I stopped that obnoxious wagon. I told him I would think the matter over, and I thought we could arrange it some way so we could get along in a pleasant and neighborly way, as we always had done. But the more I thought of it, the more difficult it seemed to me to avoid striking his old customers, unless I stopped the wagon. But if I did this, how should I dispose of my crops that were just beginning to be ready for market? I hadn't considered the matter very long before I thought of the text at the head of our talk to-day. Of course, he threw it up to me that I professed to be a Christian; and he asked me if it was a Christian thing to do, to break down a poor man's occupation, especially if he had established a business, and earned a livelihood in it for more than fourteen years. He said that he understood that I kept four or five men employed on only ten acres of ground; that I had planted about 8000 stalks of celery, for a little home market like ours. I was obliged to smile in spite of myself when I plead guilty. Yes, and I had to admit it, that the celery-plants were growing splendidly.

I want to digress here enough to say that my friend W. J. Green, from the Ohio Agricultural College, Columbus, has just paid me a visit to-day, and looked at my celery and other plants. There was no celery at the Ohio State Fair equal to ours, neither was there any to be found on the market in the entire city of Columbus, to compare with it; and as my friend took leave he made the remark, "Mr. Root, I think you ought to send a few stalks of that White-Plume celery to Peter Henderson. It might astonish him, even if he is the originator of the variety."

My plans were beginning to bud and blossom, and there had been a pleasant prospect before me for some time of being able to teach our Medina people what could be done in the way of scientific market gardening. But here were my fond hopes, dashed to the ground. It is true, my old neighbor did not do very much at the business, for he never owned even a horse, but did all his work by hand—hiring, perhaps, a man to plow occasionally; therefore the amount of stuff he raised during a season did not amount to very much. But notwithstanding, his little home and his little business were, without any question, in great jeopardy, if I kept on in the way I had been doing. After he had got to talking more coolly, he declared I could not have more effectually broken him

up, had I sat down and planned it out deliberately. Why not buy him out, together with his good will of the business? Several objections met me; first, I might have to buy out every man who owned a little garden. Next he would want me to give him employment. But he drank beer and cider, as many of his countrymen do, and he was in the habit of taking God's name in vain, as I had abundant evidence from his talk then and there. I pondered the question over Sunday. I read that chapter, the 13th of Genesis, and I remembered how Abraham did. It was not an easy matter for me to go away from Medina to start business somewhere else. I stated the question to one of the deacons of our church. He said he thought the claim was a little unreasonable, and that I had a perfect right to go into any such business if I should so choose. But he agreed with me, notwithstanding, that one ought to follow Paul's advice in living "peaceably with all men, so far as in him lieth."

Monday morning, as soon as my work was a little bit ahead, I called on my old neighbor. His wife was sick, and near to death. He was obliged to do his own housework. His boys used to be in my Sunday-school class, but I now remembered that they had not been for some time. As I looked about his garden my heart was touched, and I resolved that, if it were a possible thing, my business should not stand in the way of his business. He seemed sad, but much pleasanter and kinder than he had been the Saturday night before. By the way, dear friends, did you never realize, when you are in difficulty with a neighbor, that it is an excellent thing to see how far you can narrow down your differences until you get at the *exact point of disagreement*? I proposed that we should divide up the garden crops, and that he should raise one thing and I another. I had a great lot of tomatoes, and he had none; he had a large lot of beets, but mine were all sold for the season. So we took up one thing after another, and, to my great joy and surprise, it narrowed down to almost one single vegetable. He had about a thousand celery-plants, and I had eight thousand. Now, said I,—

"Friend —, what will you take for your thousand celery-plants?"

"Why, Mr. Root," said he, "you have eight thousand already, and I am afraid you will not be able to sell them. You certainly do not want to buy any more."

But I assured him that I did want to buy more, and that if he would set a price I thought we could soon make a bargain.

"But, Mr. Root, you are doing this because you want to accommodate me, and not because you want the plants. I feel differently about the matter from what I did, and I guess it is all right. You just go on with your wagon, and we won't say any thing more about it."

"But, how about the saloon? You will not start any saloon, neighbor —?"

"No, I will not start any saloon;" and he smiled in such a good-hearted way that I knew there was no danger. Do I need tell you, friends, what a feeling of joy and peace

came into my heart, not because the way was open to me to go on with my experimental farm of ten acres, but because one more of the Bible texts and promises had been tested and tried. The spirit that Christ enjoins had come out once more triumphant.

The wagon came along a few minutes later, and he looked pleasantly toward the boys who had it in charge. As I rode along home with them I told them how it had turned out.

"Now, boys," said I, "don't ever any of you say a word disparagingly of neighbor—or of his products. If his boys are selling things to any of our customers, let them have the trade, and don't call there; and buy their stuff of them whenever they have any thing that you need, even if you sell it without any profit."

Oh, what a very, very pleasant thing it is to lend assistance to a neighbor who is in the same business as yourself, and to let him see that you are glad to help him, and glad to see him prosper! Why, it is worth more than all the profitable ventures any man ever made! There is one thing I am feeling a little badly about; and that is, that no opportunity has presented itself as yet for me to show my gratitude to my neighbor for the kind way in which he has given way in this matter of competition. I have prayed for him and for his motherless boys, for the mother is now, while I write, no more. But such a multitude of cares press upon me, especially since my absence of three days at the State Fair, that many a thing I had planned to do has to be passed by, as out of the question; but yet, amid all these cares a bright gleam of sunshine seems to break forth whenever I think of those words of that old patriarch when he said, "Let there be no strife, I pray thee, between me and thee, . . . for we be brethren." In my case, it is not exactly brethren by ties of blood, but it is an old neighbor; and what term comes nearer to the title of "brethren" than the one of "neighbor"? How very, very pleasant it is to be able to say, "Nothing but love and kindness exists, so far as I know, between myself and my neighbors!"

A LETTER FROM W. Z. HUTCHINSON.

SHALL OUR CHILDREN HAVE HAMMERS AND NAILS
TO LOSE AND WASTE?

FRIEND ROOT:—If you are busy now, don't stop to read this letter. It isn't a business letter; it is only, as our little girls say, "Just a 'jibber jabber' letter." Put it in your pocket, and read it at your leisure, or to Mrs. R. this evening.

I was much pleased at what you said in reply to one of the juvenile letters; i. e., let the little boy use the nails; they are not wasted. Perhaps these are not the exact words used, but that is the meaning. It carried me back to my boyhood days when nails were so hard to get. Just above our place, on the Butternut Creek, was a saw-mill, and a great many pieces of boards floated down the stream and lodged against logs. From this "flood-wood" we, brother and I, used to pull out pieces of boards,

"edgings" and the like, let them dry upon the bank, and then drag them home to "make things," to build dams, make water-wheels, wind-mills, sawing-machines, etc. But, oh the struggle for nails! Every old board and building was ransacked for them; and if we didn't "find" enough, and took some of father's, then how he would "scold."

I remember one time when brother and I had carried some butter and eggs to a store about five miles distant, and exchanged them for groceries, and some tobacco for father, I bought two pounds of nails, paying for them out of the butter and eggs, and hid them in a log-heap when we got home. But after we had gotten them in this way we couldn't take any comfort in using them, and finally went and told mother all about it. After that she quite often used to let us have a dozen eggs "to buy nails with." I have not yet forgotten how firmly I resolved, if ever I had any children, they should have all the nails they wanted.

Father was a pretty good father, but seldom took much interest in our boyish plans and projects. He had a chest of tools, and allowed us free access to them, for which we have always been thankful.

Well, at last I have children of my own, and they use ten nails where I used one, even if they are girls. In the shop are two large boxes in which are thrown all the odds and ends, and the girls understand that they can have any thing they find in those boxes. If they want any thing else they always come with a "Pa, can I have this?" They are at liberty to use the hammers, nails, and saw; and so proficient have they become, that when I hear them sawing or pounding I sometimes think it is somebody else, and go over to see who it is. Their latest production is a little bee-hive, about eight inches long, fashioned after the Heddon hive. They "got stuck" on the frames, couldn't make them, and felt so badly over it that I came to the rescue; and when the hive was finished, then they wanted some bees in it, and teased so much about it that finally I transferred a nucleus to it. The nucleus had a laying queen. The bees were some of those gentle Italians from Cyula Linswik, and the little girls go down and open the hive several times a day and "find the queen," sometimes without smoke, and sometimes they light the smoker and use it so that can be doing "just as pa does."

How ownership does awaken interest in any thing, doesn't it, friend R.? I thought the girls had asked me about all the questions about bees that they could think of; but when they became the happy possessors of a little colony of their own, when they could take their little chairs and sit down by it and see their bees going out and in the hive, then the questions came thicker and faster. I got along very well until this one came: "Pa, what shall we do with them so they won't die next winter?" I said, "I am going to feed mine sugar, and put them in a warm cellar." They guessed they "would too." The twins are seven this fall, and Ivy is nineteen months younger.

What a pleasure it is to give pleasure, and especially so to give pleasure to those we love! I wonder if parents realize how much they might add to their children's happiness by taking a little interest in their childish pleasures.

I don't know, old friend, why I have written like this to you. I just "felt like it," and that's all there is to it.

W. Z. HUTCHINSON.

Rogersville, Mich.

Well, I suspect, friend W. Z., you just felt like writing as you did, because you knew it would hit me exactly. Huber has arrived at the age of nails and hammers, or pretty nearly so. Only yesterday I scowled up my face, and was going to remonstrate pretty earnestly at the awful clatter somebody was making while I was trying to talk; but after I got where the sounds came from I found it was Huber with a three-cent hammer, a tin dish of nails, and a lot of sticks such as the girls have to put in the A B C book to keep the edges from getting injured in the mails. His face was so full of enthusiasm, and he was having such a real good time, that I let the scowl on my face slide off, and I turned around and went away, and didn't scold a bit. Yes, let even the girls have their nails and their hammers and bee-hives, and whatever else they take a notion to, that will not do them harm, and especially these things that will teach them to love rural pursuits and God's own handiwork. Yes, I remember when I wanted to make a corn-planter, when I was a small boy, my father objected; but I told him if it did not work I would take every nail out, without bending it, and bring them all back to him. I did it, too, and I think it taught me a useful lesson, to remember that nails cost money.

LETTER FROM ONE OF OUR JUVENILES AFTER SHE HAS GROWN UP.

FROM 25 TO 63, AND OVER 1250 LBS. OF HONEY.

FATHER came through the winter with 25 stands. They began swarming the 25th of April, and they just kept swarming until, after all he has said against the old plan, he was compelled to hive in boxes, half-barrels, or any thing. He is a nurseryman, and while attending to his trees, building the new house, and such little jobs, he hadn't much time to look after the industrious pets. They increased to 63, and he has taken only about 50 lbs. to the hive, and left them plenty for winter. The honey is good, well flavored, and thick; but the little scamps have put in a spot of bee-bread every once in a while in the most of it.

I have just been watching the bees dig the "trifolium" off the sides of an empty hive. They carry it away in their leg baskets. I suppose they want it to chink up cracks with. Father has killed some loaded specimens for me, but I suppose they will not reach you in very good shape. There were all kinds at the work—Holy-Lands, blacks, and hybrids.

ALSIKE CLOVER.

Father has some alsike clover. He makes hay of it, and likes it better than any other clover. Several of the neighbors have sown test pieces of it, and, so far as I can learn, they are well satisfied with it.

When I "chipped in" once you mistook me for a juvenile. I am one of those care-free, independent "old maids;" and as I signed only my initials, several who wanted to learn something about Oregon wrote to me and addressed me as "A. M. Hall, Esq.," and "dear sir." I enjoyed the joke very much, but still I thought it was a little rough on the innocent inquirers, and so I shall give my proper name this time.

ANNA M. HALL.

Beaverton, Oregon, August 31, 1885.

Thank you, friend Anna, for your kind re-

port. The spots of bee-bread you say you saw through your comb honey are very unusual, and I should think likely it was caused by something in the arrangement of the surplus boxes in regard to the brood-nest. I have often noticed the bees carrying their propolis in the same way they do their pollen, and I believe you are right in your conjecture that they wanted it to chink up with in anticipation of winter. The specimen you mailed showed the gum still adhering to the little leg.—I believe that some of the best friends I have in the world, Anna, belong to the class which you are pleased to say you represent. You see, women who do not get married always want something to do. I happen to be one of those individuals who always have lots of schemes and plans, and so I am always needing skillful helpers. Well, women who are free from the care of families are just the ones to help me. I help them, and they help me. Isn't that a pleasant relationship?

MRS. CHADDOCK'S LETTER.

She Proposes Starting a Class in Botany Among the Juveniles.

LESSON I.—THE PUMPKIN.

I WANT to study botany; and as it is such lonesome work studying any thing alone, I wonder if the juvenile readers won't help me. Let's begin with the pumpkin. How many of the little folks can tell me to what family it belongs? and who will tell me about the two kinds of flowers found on the same vine? Describe the stamens in each, and tell me where the pistil is. This is a short lesson, but I believe in short lessons and quick answers.

MAHALA B. CHADDOCK.

Vermont, Ill., Aug. 20, 1885.

Mrs. C., I do not know very much about the botanical character of the pumpkin, but I do know this: That Italian bees seem exceedingly fond of the large squash and pumpkin blossoms. The other morning, when I was picking green corn I bumped one of these great posies with my rubber boot (for it was a dark and wet morning), and out came so many Italian bees, one after the other, that I almost began to think they had started a nucleus there. Some years ago a field of pumpkins near our apiary yielded honey enough to settle the hive on the spring scale a little every morning, when the weather was favorable. The trouble about our juvenile class, I fear, will be this: There will not be room enough for a tenth part of the answers.

HOW TO CATCH BUMBLE-BEES.

A NOVEL PLAN.

I WILL write a letter for the juveniles. Under one of my strongest colonies of bees was a nest of bumble-bees, which annoyed me very much. Whenever I went to pull the grass about the hive, out they would come, and smoke would do no good; they would follow me all over the apiary. Yesterday one stung me on the head, and how to get them destroyed I could not think. If I moved the hive I was afraid I should destroy too many bees. My daughter told me to "jug them," and I did.

I took a jug, and filled it about half full of water, and set it by the side of the hive, took a long stick, punched under the hive, and in fifteen minutes they were safely juggled. I think the happiest sight to me that I ever saw was those bumble-bees going "thud" into that jug.

R. ROBINSON.

Laclede, Fayette Co., Ill.

Friend R., I have heard before of setting a black jug near to a bumble-bees' nest, in the way you have described. I never had much faith in it, because it seemed so unreasonable. If it is really true, however, that the bumble-bees will, the whole of them, one after the other, duck down into that black hole, it may be, perhaps, the easiest way of getting rid of such intruders.

THE WAVE OF SKEPTICISM.

BY HARTIE MEACHAM.

A gallant ship was riding,
A ship long tried and true,
Upon the heaving bosom
Of the ocean broad and blue.
And as it glided onward,
A song rose loud and clear,
Whose every note was brimful
Of kindly love and cheer.

At peace were all its workers,
As was the briny deep,
When in the hazy distance
A wave was seen to leap.

At first a tiny wavelet
Was all that could be seen;
But as it rolled onward,
Fast grew its silv'ry sheen.

And as the captain viewed it
With trusty glass in hand,
He said, "Of all the wonders
I've seen on sea or land,

This wave so lone, so frightful,
In its march across the sea,
Is stranger of all wonders
That e'er were shown to me."

Then as onward still it came,
He cried in tones of might,
"Let every man unto the ship
Lash himself so fast and tight.

That the wildly raging wave
Do not wash him overboard,
Faster came the rising swell,
And louder still it roared.

Some hastened to obey his word;
But some of the goodly crew
Said: "Who's afraid of waves-
lets,
On this ship so strong and true?"

Some clung unto the rigging,
And thought by their own might
To resist its wild fury
And be victor in the fight.

Oh, the wail of the lost ones
As it struck that ship so brave,
And dragged the unsecured ones
Down to a watery grave!

Then those poor deluded ones
Who clung by their own strength—
Methinks I hear their shriek-
ing
As they each gave out at length.

And dropped into the waters
Of that seething, surging mass,
For strength and courage
Praying
When 'twas too late, alas!

And as the wave proceeded
Upon its cruel way,
And left the ship uninjured
By its great watery fray,

[Thy word is true from the beginning; and every one of thy righteous judgments endureth for ever.]—Ps. 119:160.

[Thy statutes have been my songs in the house of my pilgrimage.]—Ps. 119:54.

[Great peace have they that love thy law.]—Ps. 119:165.
[My peace I leave with you.]—John 14:27.

[A prudent man foreseeth the evil and hideth himself.]—Prov. 10:12.

[And then appeared another wonder in heaven, and behold a great red dragon having seven heads and ten horns, and seven crowns upon his heads.]—Rev. 12:3.

And all the world wondered after the beast, and they worshipped the dragon which gave power unto the beast; and there was given unto him a month, speaking great things and blasphemies, and power was given unto him to continue forty and two months.]—Rev. 13:4, 5.

[That we be no more . . . carried about by every wind of doctrine, by the sleight of men, and cunning craftiness, whereby they lie in wait to deceive.]—Eph. 4:14.

Therefore, my brethren dearly beloved and longed for, my joy and crown, so stand fast in the Lord, my dearly beloved.]—Phil. 4:1.

[Take heed, brethren, lest there be in any of you an evil heart of unbelief, in departing from the living God. But (short one another daily, while it is called To-day.)]—Hebrews 3:12.

[O God the Lord, the strength of my salvation, thou hast covered my head in the day of battle.]—Ps. 147:7.

[There shall be weeping, and gnashing of teeth.]—Matt. 24:51.

[Let him that thinketh he standeth take heed lest he fall.]—1 Cor. 10:12.

[They that were ready went in with him to the marriage, and the door was shut.]—Matt. 25:10.

[The gates of hell shall not prevail against it.]—Matt. 16:18.

There rose upon the waters
A shout of thanks profound,
From those who, by the orders,
Were so securely bound.

Let us all prepare ourselves
For this wave of unbelief,
That o'er our land is sweeping.
Bringing many hearts to grief.

For 'twill pass upon its way,
And leave our ship unharmed;
But hard's the fate of those
Who'll not
By this sad tale be warned.

Mogadore, O., June, 1885.

[Blessing, and honor, and glory, and power, be unto him that sitteth upon the throne.]—Rev. 5:13.

[But the fearful and unbelieving shall have their part in the lake that burneth with fire and brimstone, which is the second death.]—Rev. 21:8.

[Blessed are they that do his commandments.]—Rev. 22:14.

A JUVENILE'S EXPERIENCE IN RAISING QUEENS.

SOME QUERIES ABOUT IT.

I AM trying to raise queens. I got four nuclei of you at two different times, and have them all in working order now. About a month and a half ago I gave my nuclei some eggs from an Italian queen that produces good three-banded workers. The nucleus drew out some cells; and when they hatched, some of the queens were light and some were dark. About twelve or fifteen days ago I gave them some more eggs from the same, and I now have one virgin queen one or two days old, and she is as black as any black queen could be. There was a swarm came from her mother's hive, and the queen in it is a bright yellow. Now, Mr. Root, can you tell me the reason that the mother is yellow, and her eggs produce yellow workers but black queens?

One of papa's Italian hives sent out two swarms, and after that we thought it was queenless; so we gave them brood to test them, and so, sure enough, they went right to work making cells. After they had sealed them all over, papa cut them all out except one which he left for the queen to rear down. He then caged a virgin queen and put her in the hive and left her there. The cage had some candy in one end, and they ate her out. When I went there the next day they were balling her a little, but I gave them a smoking and left her. The next time I went there I could not find the queen, but found, instead, a cell sealed, which I think was a fertile worker. When papa came home he tore down the cell and hung a laying queen down in their combs, and left her there from Saturday till Monday morning. Then he took the plug out and was going to tie a paper over the cage, when the queen got out and flew away, but soon came back, but flew away the second time, and then we caught her and put paper over the cage. The next day the paper was gone; the queen was gone, but they had a cell instead, which I tore down. Now, Mr. Root, would you please tell me what you would have done with that hive?

IRVING D. BANKS.

Princeton, N. J., August 12, 1885.

Friend Irving, it is quite a common thing to find Italian queens producing full-blood Italians, but whose daughters are very dark. It is common for the same queen to produce dark queens early in the season, or when the cells are reared in small nuclei, while during the summer time her queens will be large and yellow—that is, providing they are reared in good strong colonies.—There is nothing else to do with the hive you mention, but to give them some more brood, to be sure they are queenless; and when you

see cells started, introduce another queen, or let them raise one. Sometimes it takes so long to get a certain queen introduced into a certain colony, that one is sorely tempted to let them perish; but that will never pay, you know.

FESSLER'S BEES.

BY JAMES WHITCOMBE RILEY.

"Talkin' 'bout yer bees," says Ike,
 "Speakin' slow and serious-like,
 "D'ever tell you 'bout old 'Bee'—
 "Old 'Bee' Fessler?" Ike says he:
 "Might call him a bee expert,
 When it come to handlin' bees—
 Roll the sleeves up of his shirt
 And wade in amongst the trees
 Where a swarm 'ud settle, and—
 Blamedest man on top o' dirt!—
 Rake 'em with his naked hand
 Right back in the hive agin—
 Jes' as easy as you please!
 Nary bee 'at split the breeze
 Ever jabbed a stinger in
 Old 'Bee' Fessler—jes' in fun,
 Er in airnest—nary one!—
 Couldn't agg one on to nuther,
 A-y one way er the other!"

"Old 'Bee' Fessler," Ike says he,
 "Made a spesbyalty
 Jes' o' bees, and built a shed;
 Len'th about a half a mild!
 Had about a thousan' head
 O' hives, I reckon—tame and wild!
 Durndest buzzin' ever wuz!
 Wuss'n telegraph poles does
 When they're sockin' home the news
 Tight as they kin let 'er loose!—
 Visitors rap out and come
 Clean from town to hear 'em hum,
 And stop at the kivered bridge;
 But wuz some 'ud cross the ridge
 Allus, and go closter—so's
 They could see 'em hum, I s'pose!
 'Peared like strangers down that track
 Allus met folks comin' back
 Lookin' extra fat and hearty
 Fer a city picnic party!"

"Fore he went to Floridy,
 "Old 'Bee' Fessler," Ike says he,—
 "Old 'Bee' Fessler couldn't bide
 Children on his place," says Ike.
 "Yit for all they'd climb inside
 And tromp round there, keenerlike,
 In their bare feet. 'Bee' could tell
 Ev'ry town boy by his yell—
 So's 'at when they bounded the fence
 Didn't make no difference!
 He'd jes' git down on one knee
 In the grass and pat the bee;
 And, ef 't adn't staid stuck in,
 Fess 'ud set the sting agin—
 'N potter off, and wait around
 Fer the old familiar sound.
 Allus boys there, more or less,
 Skootin' round the premises!
 When the buckwheat was in bloom,
 Lawdy! how them bees 'ud boom
 Round the boys 'at crossed that way
 Fer the creek on Saturday!
 Never seemed to me su'prisin'
 'At the sting of bees 'us pizin'."

"Fore he went to Floridy,"
 Ike says, "nothin' 'bout a bee
 'At old Fessler didn't know—
 W'y, it jes' 'peared like 'at he
 Knewed their language, high and low!
 Claimed he told jes' by their buzz
 What they wuzt and wishes wuz!
 Peek in them-air little holes
 Round the porches of the hive—
 Drat thespesky little souls!—
 Could a skinned man alive!
 Bore right in there with his thumb,
 And equat down and scrape the gum
 Outen ev'ry hole, and blow
 'N bresh the crumbs off, don't you know!
 Take the roof off, and slide back
 Them-air glass concerns they pack

Full o' honey, and jes' lean
 'N grabble 'mongst 'em for the queen!
 Fetch her out and show you to her—
 Jes', you might say, interview her!"

"Year er two," says Ike says he,
 "Fore he went to Floridy,
 Fessler struck the theory
 Honey was the same as love.—
 You could make it day and night.—
 Said them bees o' his could be
 Got jes' twic' the work out of
 Ef a feller managed right.
 He contended ef bees found
 Blossoms all the year around,
 He could git 'em down at once
 To work all the winter months
 Same as summer. So one fall
 When their summer's work was done,
 'Bee' turns in and robs 'em all—
 Loads the hives then, one by one,
 On the cyars, and 'lowed he'd see
 Ef bees loated in Floridy!
 Said he bet he'd know the reason
 Ef his didn't work that season!"

"And," says Ike, "it's jes," says he,
 "Like old Fessler says to me,—
 'Any man kin fool a bee,
 Git him down in Floridy!'
 'Peared at fust, as old 'Bee' said,
 Fer to kind o' turn their head
 For a spell—but bless you! they
 Didn't lose a half a day
 Altogether!—Jes' lit in
 Them-air tropics, and them-air
 Cacktusses a-ripen-nin,
 'N magnoliers, and sweet peas,
 'N 'simmon and pineapple trees,
 'N ripe bananners, here and there,
 'N dates a-danglin' in the breeze,
 'N figs and reezins ev'rywhere—
 All waitin' jes' fer Fessler's bees!
 'N Fessler's bees, with gaumy wings,
 A-gittin' down and whoopin' things!
 Fessler kind o' overseen!"

"Em, and sort o' 'hee-o' heein'!"

"Fess, of course, he took his ease,
 But 'twuz bilious on the bees!
 Sweat, you know, 'ud just stand out
 On their forreds—pant and groan
 And grunt round and limp about!—
 And old 'Bee,' o' course, a-knowin',
 'Twuzn't no fair shak to play
 On them pore dumb inseccks, ner
 To abuse 'em that away.
 Bees has rights, I'm here to say,
 And that's all they ast him fer!
 Cleared big money! Well, I guess
 'Bee' shipped honey, more or less,
 Into ev'ry State, perhaps,
 Ever put down on the maps!"

"But by the time he fetched 'em back
 In the spring agin," says Ike,
 They was actin' s'picious like.—
 Though they 'peared to 'lost the track
 O' every thing they saw or heard.
 They'd lay round the porch and gap'
 At their shadders in the sun,
 Do less like untill some bird
 Suddenly 'ud may be drape
 In a bloomin' churry-tree,
 Twitterin' a tune 'at run
 In their minds familiarly:
 They'd revive up, kind o', then,
 Like they arried,—"Well, it's ben
 The most longest summer we
 Ever saw or want to see!—
 Must be right, though, er old 'Bee'
 'Ud notify us," they-says-ee,
 And they'd sort o' square their chin
 And git down to work agin—
 Meanin' round their honey makin'
 Kind o' like their head was achin'.
 Tetchin' fer to see how they
 Trusted Fessler that away—
 Him a-lazin' round, and smokin'
 To hisself to see 'em workin'!"

"But old 'Bee,'" says Ike, says he,—
 "Now where is he? Where's he gone?—
 Where's the head he helt so free!—
 Where's his pride and vanity!—
 What's his hopes a restin' on?—

—Indianapolis Journal.



Every boy or girl, under 15 years of age, who writes a letter for this department, CONTAINING SOME VALUABLE FACT, NOT GENERALLY KNOWN, ON BEES OR OTHER MATTERS, will receive one of David Cook's excellent five-cent Sunday-school books. Many of these books contain the same matter that you find in Sunday-school books costing from \$1.00 to \$1.50. If you have had one or more books, give us the names that we may not send the same twice. We have now in stock six different books, as follows, viz. *Sheep, Off, The Giant-Killer, The Roby Family, Rescued from Egypt, and Ten Nights in a Bar-Room.* We have also *Our Homes, Part I, and Our Homes, Part II.* Besides the above books, you may have a photograph of our old house apary, taken a great many years ago. In it is a picture of myself, Blue-Eyes, and Caddy, and a glimpse of Ernest. We have also some pretty little-colored pictures of birds, fruits, flowers, etc., suitable for framing. You can have your choice of any one of the above pictures or books for every letter that gives us some valuable piece of information.

"A chief's amang ye takin' notes,
An' faith, he'll prent it."

MY little friends, we have not got quite so many juvenile letters this month as usual, but they are extra good, as you may notice. The reason is this: I have been obliged to let Ernest look them over, because of my multitude of cares, and he thinks a letter should not be published, even from the little ones, as a rule, unless it contains something of value. I presume he is right about it, but it seems a little hard to refuse to give place to any little letter, even though it may not be of much account, or a repetition of something that has been written a great many times before. You will all have to learn this lesson some time or other; and perhaps it may be as well to learn it now; that is, there is no excellence without great labor; and those who work industriously, and try hard, are the ones who will succeed. And to be consistent with my own teachings, I will stop right here and make *my* little letter (or letter to the little folks) a short one.

A HORSE STUNG TO DEATH BY BEES.

Two years ago this summer our bees stung my uncle's horse to death. My pa bought one of your Italian queens, and the ants killed it.

La Otto, Ind., Aug., 1885. ELLIS SIMON, age 10.

STUNG THIRTEEN TIMES.

Bees were first introduced into California in 1839, and into South America in 1810. The bee is the most useful insect there is. I was once stung thirteen times at once. I struck the hive once with a stick, and they swarmed upon me.

EUGENE HOLZER.

Allerton, Wayne Co., Ia., Feb. 13, 1885.

POKING THE ENTRANCE OF A HIVE.

Sometimes when I go past the hives to swing in the hammock, the bees sting me. I have been stung four or five times. Last summer I took a stick and poked it into the entrance of a hive, and the bees

came out and stung me in several places. I don't think I shall do it again. A few days ago one of my little kittens scratched me on the arm.

Acushnet, Mass. BERTIE BENNETT, age 3.

HONEY, BUT NONE TO EAT.

My pa took some honey out of the hive Saturday. The bees work very well. We have plenty of flowers around the grove for the bees to gather honey from. I like honey, but ma doesn't let me have much, for she wants to sell it. We have lots of applea and plums. We have lots of little pigs.

HULDAH WILLIAMS.

Banks, Minn., Aug. 23, 1885.

MARY'S NEW HOME.

My father and mother have just moved to our new home in the woods. My mother had to go to town the other day, and left me at home to keep house all alone. I looked out that no cattle came around to tip our bees over. We have six hives of bees, and want to get more. I like to read the children's letters. I never went to school, nor to Sunday-school, and I never had one of your books.

Campo Seco, Cal. MARY A. LUCK, age 8.

HONEY, FISH, AND CIDER.

We had 26 hives of bees when I wrote you the other letter. We got over 500 lbs. of comb honey. It hasn't a very good sale here. We get 15 to 17 cents per lb. We are making a fish-pond now, of 2 acres. There is a cider-mill going to start up pretty soon near our house. Do you think the cider will hurt the bees?

FRED W. ISRAEL.

Damascus, O., Aug. 7, 1885.

See A B C book in regard to cider-mills.

HOW MY PA CHANGED A BOX HIVE INTO A FRAME HIVE.

I must tell you how my pa fixed his box hives last spring. He took out the box above, and bored five rows of holes in a straight line, and he made frames to fit, and filled them with foundation; then put them in the space between the holes. We got plenty of honey. This way of getting honey from box hives is something new here, but it was a real success.

CHARLIE T. STEPHENSON, age 10.

Ripley, Ohio.

THE KITTEN, AND HER EXPERIENCE WITH BEES.

I have a little kitten named Moose. It was playing one warm day in front of one of pa's hives; and seeing the bees crawling out, it ran and put its paw on one bee, and then another. It thought it had found something funny to play with; but the bees got too hot for Moose; and I tell you, you would have laughed to see him run and tumble and mew. Poor fellow! He never went back there again.

Boothsville, W. Va. MAGGIE NUZUM.

BEES GOING AFTER WATER.

There is a meadow just below our house, which is rather swampy, and the day after a rain storm you may see a great number of bees going to and coming from this meadow before the water settles into the ground.

MILTON BENNETT, age 6.

Acushnet, Mass.

Friend Milton, the bees go down into the swampy ground for water. We have a fountain for ours, and we let on just water enough so that it drips over the edge slowly. The bees alight all around the edge, and seem to enjoy having a place where they can get water every day.

SELLING HONEY AT THE FAIR.

My grandpa has ten stands of bees. They are doing well. He and I went over to the fair to see if we could sell some honey.

Dexter, Maine.

BENNIE ELLIS.

A NOVEL WAY TO HAVE A SWARM.

Papa bought a hive of bees a year ago last December, at an auction, but they all died last March. The fore part of June, papa put the hive, full of empty comb, up in the top of the chimney. In a few days a swarm came and went into the hive. Papa took them down and put them on a stand, and they did very well. The fore part of August they swarmed. We now have two colonies of bees in box hives.

Lanesville, Conn.

FRED J. WANZER.

THROWING DIRT TO BRING DOWN A SWARM.

My father keeps bees, but I do not have much to do with them; but when they fly away, then I help to chase them. I helped stop a swarm this summer by throwing dirt at them. They are doing well. Father has kept bees a number of years. He can handle them without much trouble; he has them in the Simplicity hive, and has taken 96 lbs. of honey from 3 hives.

CHARLIE HUNT, age 11.

Amboy, Ill., Aug. 6, 1885.

WILLIE'S LETTER, AND HIS OPINION ABOUT SWEARING.

We had a swarm of bees come out three weeks ago last Sunday. Our bees nearly always swarm on Sunday. I am only a little boy, but I want to be as good as I can. On Sunday some of my neighbors' little boys swear, but I don't. I think it is awful wicked. Pa has an incubator. We have nice large Plymouth Rocks that were hatched in the incubator. The last time I wrote to you I had only one sheep; now I have two.

Memphis, Ind.

WILLIE COOMBS.

I agree with you, Willie, that it is "awful wicked" to take God's name in vain, and it makes me feel glad to know that there are little boys who can not be hired to do such wicked things for any consideration whatever.

MELONS INSTEAD OF BEES.

My father put 13 swarms in the cellar last winter. All came out alive in the spring. He had 10 hives transferred into the Simplicity; they are doing well. He has 27 swarms now. He has them in a plum orchard, and hardly ever loses a swarm; but he had one come to him. He thinks they are part Italians. My brother and I can make more raising melons. We have a large patch. We sold 12 dollars' worth last summer. There is something we can do, if we can not handle bees.

GEORGIE HUNT.

Amboy, Ill., Aug. 7, 1885.

By all means, raise melons, Georgie, if that kind of work suits you. The boy who *loves* the business, and sticks to it until he becomes an expert, will be almost sure to make money at it; and we might almost say the same of any other rural industry.

BEES STINGING CARP.

My father wintered, last winter, 140 stands of bees, losing one in March. We are feeding our bees now. The drought last fall killed the white clover here. Our bees have not made any honey this year to amount to any thing. We had 94 German carp, and our bees stung two in the mouth and killed them. Our carp are very tame. We can hold a

piece of bread in the water and they will come and eat out of our hand.

ANNA QUINBY, age 14.

Edenton, Clermont Co., O., Aug. 24, 1885.

BEES WORKING ON BUCKWHEAT.

My uncle has eighteen colonies. They are very busy nowadays. Uncle works among the bees, and they alight on his hands and on his back, but don't sting him, while if others go near the hives they get stung. If we go by the buckwheat and listen, we can hear the bees humming as they do around the hives.

ETTA B. PECK, age 13.

Banks, Faribault Co., Minn., Aug. 22, 1885.

AN OBSERVATORY HIVE; NOTES TAKEN BY A JUVENILE.

We have an observatory hive in our window, which has been there about three months. Pa uses it to raise queens. It had a queen fertilized last week; she was absent from the hive 38 minutes; she is now introduced to a fall colony, and the observatory is raising another one now. Pa has taken 457 lbs. of honey from six colonies, and increased to 14.

J. A. SHENEMAN, age 12.

Pharisburg, Union Co., O.

HOW TO GET A SWARM FROM THE TOP OF A YOUNG MAPLE-TREE.

My grandpa has 18 colonies of bees. He had a swarm in the top of a maple-tree. He tied the clothes-line to the top of the tree, then he bent the tree over and tied it to a plum-tree, then he swept the bees into the hive. My grandpa has two acres of buckwheat. Grandpa has two wild geese. They are so tame that they will eat right out of your hand. Their names are Punch and Judy.

CLIFFORD BUSS, age 9.

Banks, Faribault Co., Minn., Aug. 23, 1885.

BEES FOR MEDICINE, ETC.

I have been a reader of GLEANINGS ever since I was old enough to read. Pa started in last spring with 36 stands; increased to 46 by swarming. He does not let them swarm very much. He gives them plenty of work to do. Pa sold about \$100 worth of honey last summer, and every time he goes to town some want to know if he has got any more honey to sell, and he has to tell them no. He uses the Langstroth hives and the chaff hives. Did you ever hear of bees for medicine? Ma's baby was sick with the hives, and the woman doctor took one dozen bees and made tea of them, and the baby got well.

JESSE O. SWITZER, age 14.

Bucklin, Linn Co., Mo., Feb. 12, 1885.

Yes, Jesse, I have heard of bees for medicine. Your little story is almost a joke, but I presume you did not know it. You see, if the baby was sick with the "*hives*" it would be the most natural thing in the world to give it a tea made of *bees*. I suppose that by the term "*hives*" you mean a sort of breaking-out in large red blotches. Well, the poison from bee-stings is a remedy used very much by a certain school of medicine. That the remedy is a powerful one, there is no doubt. In some of our back volumes I have told you about selling poison-bags to the doctors for so much a thousand. Now, it would not be at all strange if this poison from the bee-sting were just the proper remedy, if administered in exactly the right quantity. A very little bee-poison will make one feel quite sick.

WARREN'S LETTER.

Thirteen years ago Eagle Lake was a forest, and now it has 300 inhabitants. My uncle is in the bee business. He makes his own fdn. My father is a soldier. I'd like to see Huber.

Eagle Lake, Minn. WARREN KEEBAUGH, age 12.

PROPOLIS MADE OF PAINT.

The bees do funny things sometimes. Pa made some paint, to be used hot. Some was left, and thrown out. When pa opened one of his hives ma said, "That is funny-looking propolis." Pa scraped some off, and smelled of it, and said it was some of that paint he threw out. There was nothing poisonous in it, except a little red lead.

ANNA BARSHAM RUSSELL, age 10.

Osteen, Fla., Aug. 5, 1885.

BROTHER FRED'S MISCHIEF: 25 STINGS ON HIS HEAD.

My papa has 50 stands of bees. He lost 16 swarms through the winter. We have taken off 800 lbs. of honey. I have one swarm of bees. My little brother Fred is two years old, and is very mischievous. He got stung 25 times on his head.

LANA LANGFON.

Windham, Portage Co., O., Aug. 9, 1885.

Whew! So your two-year-old brother got stung 25 times, did he? Why, some of the old veterans would make a howl if they got that many all at once. I should think your brother must be pretty good grit—is he not?

A "BIG GOOSE;" A SAD EXPERIENCE.

Grandma Koosa gave brother and me a pet goose. To-day it was going by the bee-hive, and the bees saw her, and oh how they did sting her! She ran and turned over and over, and jumped on the bee-hive, and rubbed her head, and you don't know how sorry we were. Our bees are good; they don't sting us at all. I think it is because none of us use tobacco. You know they don't like tobacco.

Border Plains, Ia., Aug. 8, 1885. FRANK KOOSA.

Why, Frank, that goose must have been a "big goose" for sure, to jump on the bee-hive after she had been "goose" enough to get so near the bees as to get stung. And so you think the reason why your folks don't get stung by the bees is because your folks do not use tobacco.

LETTER FROM A FLORIDA JUVENILE.

I have lived in Florida nine years, and have just started to make a flower-garden. Flowers do nicely, if anybody will take care of them. I have several kinds of flowers. I got a few geranium cuttings from Eva S. Glawson. She has quite a number of flowers. I think roses and magnolias are the prettiest kinds of flowers. I have got a nice madeira vine climbing up the window. It is about a foot long. They have a pretty flower.

I have four tame blue-jays. They will come and eat out of my hand. They are a pretty bird, and very tame. There are a great many kinds of birds here.

The bees have not done much this year. I like honey cappings better than extracted honey. Our oranges will soon be big enough to eat. The insects are not bad this summer. I guess they have all gone north to spend the summer. I got a letter from my aunt some time ago and she said that she saw a few flying about after dark, so I guess it is true about what I said.

MINNIE S. MENDEL.

Hawk's Park, Fla., July 29.

SEASON NOT FAVORABLE FOR BEES: STRAWBERRIES BY THE THOUSAND QUARTS.

Our bees are not doing very well; for in spring it was too wet and cold, and now it is too dry. They are working some on sand mint. This is the worst season for bees we ever had. We have 15 new swarms. We had lots of strawberries. Sometimes my brothers shipped as many as a thousand quarts a day. We did not have so many raspberries or blackberries, as it was too dry and hot here. I like to take care of bees better than I used too. I have them barefooted.

FRED WIRT, age 15.

Keithsburg, Mercer Co., Ill.

HOW JOHN'S FATHER MAKES A "POLLEN-SCRAPER."

The bees are getting lots of pollen from corn. Pa has made some pollen-scrappers. He takes a strip of tin as long as the entrance of the hive, and makes a row of holes in it, each a scant 3-16 of an inch in diameter, and nails the tin over the entrance; and when the bees go in it scrapes the pollen off their legs, and about noon I brush the pollen away, and take off the tins so the bees can take out the dead ones; and in the morning I put the tins on again.

JOHN RALSTON, age 14.

Vinton, Benton Co., Ia.

Very good, John; but what in the world does your papa or anybody else want a pollen-scraper for? I have heard of the friends having too much pollen in the hives, but I never saw a hive with too much pollen in it yet, especially if I were raising bees and queens for sale. And although I may be mistaken, it seems to me you will do your colonies damage by depriving them of the pollen they worked so hard to gather.

EDNA'S REPORT.

Our bees are working as fast as they ever have. They will be so thick in the air that I ask ma or pa if they are not swarming. They look just as if they were. I am watching the bees now. We had one swarm this forenoon. We have lots of new honey. Some is so white you can hold it up to the light and look right through it and see things. Our bees are not cross one bit. When the bees swarm and pa is not at home, and ma is doing something, and her sleeves are rolled up, and there is not a bonnet or bee-veil in reach, she will run out bareheaded to look for the queen, and the bees will not sting her. I have to laugh at her. Pa is not at home now. He is at the upper bee-yard, a mile from here. Novice watches the bees there; and when they swarm he runs down and tells pa, and then he rides up with pa. We have three large rabbits and seven young ones. We did have four. One was lemon color. We got them of Mr. Fradenburg. The lemon-colored one got away.

EDNA A. BOOMHOWER.

Gallupville, Schoharie Co., N. Y.

Thank you, Edna. It does us lots of good to hear from little girls whose papas we have known for many years, as we have your pa. You see, we shouldn't know that the papas had any little girls, if these same girls didn't write us nice little letters like yours.

HOW THE BEES ROARED ON BUCKWHEAT WHERE CORENA LIVES.

We have a big piece of buckwheat. The other day when I went to dig potatoes the buckwheat was covered with bees. I looked all over, and thought it was a thrashing-machine. I stick the foundation into the boxes for pa, and put them into the frames.

The queen that he bought of you a short time ago has done well. She filled the ten frames in Simplicity hives with brood over a week ago.

One day we had a swarm, and a king-bird caught the queen, and from one swarm the queen did not come out.

CORENA WILLIAMS.

Banks, Faribault Co., Minn., Aug. 23, 1885.

Well, Corena, that is pretty well expressed. The bees made such a roaring on your buckwheat that you thought it was a thrashing-machine. I should think likely your buckwheat is doing nicely. We have a field of about one acre that begins to look very handsome; in fact, it pleases me the best of any piece of buckwheat I ever had. It was sown with a grain-drill, and we put in 300 lbs. of phosphate to the acre with the seed. The next time I hear bees humming on it in the morning, I will stop and listen, to see whether it sounds like a thrashing-machine or not.

TOBACCO COLUMN.

A NEIGHBOR'S INFLUENCE.

I SOLD a neighbor a few colonies of bees last spring; and as they were blacks I told him he would need a smoker. He thought he couldn't afford to get one, so I told him about your offer in GLEANINGS. Well, he came over to-day and asked me to send for a smoker for him. He said he had used no tobacco for six weeks, and thought he could "stick to it" (he has used tobacco for twenty years). He says, "Tell Mr. Root if I ever use it again I will pay for the smoker." If he doesn't, I will.

S. L. ESLER.

Duplain, Mich., August, 1885.

I saw in your journal that you would give a smoker to any one who would give up smoking. I gave it up the 4th of July, and intend never to smoke again, whether you send the smoker or not. I have three hives of bees.

HOMER CHARLTON.

Gorham, N. Y., July 21, 1885.

I have read GLEANINGS some, and saw your offer to give a smoker to those who quit using tobacco. I have, with the help of God, quit chewing and smoking. Will you please send me a smoker? If I use tobacco in any form again I will pay for the smoker in full.

C. W. TRACY.

Plymouth, N. Y., May 26, 1885.

I have received the queen and frame of brood. The bees you sent me are all right, and I am well pleased with them. I introduced the queen to a hive that was queenless, and it works well. One of my neighbors has quit using tobacco. Will you please send him a smoker? If he ever commences using tobacco again I will make him pay for that smoker, if you send him one.

W. HIETAND.

Palm, Pa., July 17, 1885.

I have quit the use of tobacco. After using it and cigars for ten years, I came to the conclusion I would try to quit chewing and smoking. I have done so; and now if I am entitled to one of your smokers, please send me one. If I begin using it again I will pay you for it. We have four stands of bees, and they are doing extra well for this season. Basswood has been booming.

ELMER OWENS.

Woodstock, Ohio.

You have persuaded me to quit the use of tobacco. Thanks. You may send me a smoker; and if I am not faithful I will pay for it.

B. H. MOBLAY.

Girard, Ga., May 23, 1885.

QUITTING THE USE OF TOBACCO WITH GOD'S HELP.

I have not used tobacco for about four weeks, and I intend, with God's help, never to use it again; so, please send a smoker, and help a brother in need.

S. H. WETMORE.

Wellsboro, Tioga Co., Pa., May 22, 1885.

HOW FRIEND C. QUIT THE USE OF TOBACCO.

In the year 1858 I quit the use of tobacco, having chewed and smoked the filthy weed for ten or twelve years. I found it was injuring my nervous system. It was a three months' fight; but, the victory was gained, the battle does not have to be fought over again; why? Because I gave my testimony against it — "This is the victory that overcomes the world, even our faith." Faith in whom? In God our Father, and Jesus Christ our Savior.

J. C.

INFLUENCE OF A FRIEND.

I was at the store to-day and met one of my neighbors who is a bee-keeper on a small scale. He purchased 5 lbs. of tobacco, and I told him of your offer to give any one a smoker, who would quit the use of tobacco in every form. He said that if I would write to you for a smoker he would quit. I told him I would do so. He gave back the tobacco and took coffee instead. He promises to pay for the smoker if he ever breaks over. I have induced another one of my neighbors to quit, and he makes the same promise. I think they will hold out. They are both members of the Christian Church.

Quinnimont, W. Va.

S. L. CARPER.

QUITTING THE USE OF TOBACCO "FOR CHRIST'S SAKE."

I have procured you a new subscriber to GLEANINGS. He is trying to quit the use of tobacco for Christ's sake. He has not used it now for several months. He was an inveterate smoker and chewer, but is determined, by God's help, never to use it again. Can you not give him a smoker to encourage him? He is a poor man, with a small mortgaged farm; enlisted in the army when he was fifteen, and served through the war; and through my influence he is becoming quite interested in bee culture. I think you will receive an order from him this fall.

J. F. TEMPLE.

Packerville, Ct., June 5, 1885.

ONE WHO HAS USED TOBACCO FOR THIRTY YEARS.

I can not do without GLEANINGS, even if it is a little mixed with bees, fish, potatoes, strawberries, and tobacco. I am glad to see some one keeps trying to break the chains of that miserable slavery of tobacco. I was a slave to it for over thirty years, both chewing and smoking to such a degree that I knew nothing but smoke, first in the morning before I could dress; at night I lay down with my pipe in my mouth. It often cost me 30 cents per week, besides ruining my health, dulling my nature to any thing but tobacco. I made up my mind to quit on the first day of Jan., 1881, and have never touched, tasted, or handled since; but I tell you it was a struggle. I do not write this to get a smoker. I have one of your make. I am well paid in health, as well as a dozen other ways. I think if a man gives his hearing in one month, he is well paid.

Marlette, Mich.

J. H. KIRK.

OUR HOMES.

I, even I only, am left, and they seek my life, to take it away.—1. KINGS 19:10.

I SUPPOSE most of the friends are familiar with the circumstances under which Elijah spoke these words. Elijah was a great prophet. God honored him in life, and God honored him by translating him that he should not see death. He commissioned him to perform miracles such as no human being had been permitted to perform before. Elijah was a great reformer. He surely hungered and thirsted after righteousness. But with all his bravery, and with all his devotion to the cause of righteousness, he seems to have been human, like ourselves, and was given to complaining and fault-finding at times, it would seem. James mentions this where he says:—

Elijah was a man subject to like passions as we are, and he prayed earnestly that it might not rain; and it rained not on the earth by the space of three years and six months.—JAMES 5:17.

He was just the man for the place and the times; and when God commissioned him to meet Ahab, to tell him of the famine that was to come on the nation, he took up fearlessly the task that perhaps no other man in the kingdom would have dared to perform.

We know nothing of the early history of Elijah. We only know that the general impression seemed to prevail that God was accustomed to deal with him in a miraculous manner. Even as good a man as Obadiah, was afraid that God might take the prophet away by some sort of "sleight of hand," and leave himself the victim of Ahab's fierce passions.

Elijah had a simple, childlike faith in God that fitted him for the work he was called upon to do. There was nothing in his composition to indicate the least particle of pride or love of display. The historic mantle, which has been a synonym for ages, was probably a simple garment made of sheepskin or leather; and whether he was alone in the wilderness, or standing before the king, his attire was probably just the same. He was one of the great minds of the age, and eminently fitted for calling down fire from heaven, or invoking the storms from across the sea; and through it all we may readily believe there was not a spark of pride or self-glory. It was God's honor he was defending, and God's righteousness that he wished to see prevail; and because instant reform among the children of men was not a prompt result of his great miracles, he became dissatisfied and impatient, and complained even to the angel of the Lord himself.

How often we see the same spirit manifested nowadays, even by some of God's greatest servants! and most of us, too, perhaps, who have been hungering and thirsting after righteousness have felt some of Elijah's impatience and want of faith, because God's work seems in our eyes to move with unreasonable slowness. Every little while somebody says the cause of temperance is not moving on a bit—we are just where we were years and years ago. All

the energy and zeal which has been put forth amounts to just nothing, or, at least, the effect is so soon swallowed up in this gulf of iniquity that we might as well give up and let the thing go on.

A friend of mine once said to me, "The men *all* drink—at least, there is hardly an exception." I think of it sometimes when it transpires that one whom we supposed was almost the soul of honor and temperance, has been taking stimulants for his health because "the doctor advised it," or something of that sort; and when after a little time he turns out to be openly intemperate, I begin to wonder if there is really *anybody* to be relied on. I feel ashamed of myself, however, soon afterward; for if I don't remember the words of reproof that God used in replying to Elijah, I at least recover my own good common sense. In the 18th verse of the same chapter our text comes from, God tells Elijah that there is not only *one* more like himself who is hungering and thirsting after righteousness and godliness, but that there are in Israel *seven thousand* whose knees have never been bent for one moment to Baal, and whose lips have not touched the disgusting idol. And now, then, the point of my talk to-day, dear friends, is going to be a good deal in the same place where it has been so many times before—more faith in God, and more faith in our fellow-men.

A few weeks ago I wonderfully enjoyed paying a visit to our friend Terry, of potato notoriety. After I got home I wanted to tell all about this visit, on about four pages of GLEANINGS; and as some would say it was not bee culture, I concluded I would put in two extra leaves, making it gratuitous. It seemed to me that the amount of good done by a minute account of friend Terry's farm and farming operations would warrant the outlay. Perhaps I shall do it yet; but I think I could have done it better while the incidents of the visit were fresh in my mind, and when I was full of enthusiasm on the subject. Why didn't I do it? Well, because I began to be afraid it was not best.

A year or two ago, while our daughter was in school, she felt greatly hurt because the lady who had charge of her department objected to her making occasional visits home, even when she was terribly homesick. I wrote to the lady principal in regard to the matter, and she replied that she knew it seemed hard, but that she could speak positively from years of experience, that, when pupils went home, their mind was for the time taken from their studies, their interests were divided, and it was very undesirable. Where you wish to have a pupil make steady and healthful progress in her studies, her interest must center all about these studies, and we should aim to avoid any sort of diversion or a dividing of these interests. Well, I was led to think that even these two leaves, given gratuitously, might divide the interest of the readers, and that perhaps a little book about the size of the potato-book, with proper illustrations, would be the better way, then those who don't care about Terry and his success in agriculture need

not even have the matter brought before their eyes unless they care enough about it to send for the book. Now to get back to our subject.

At the same time I visited friend Terry I called on and took along with me Mr. D. E. Fenn, of Tallmadge, O., a relative, and a very successful farmer, fully up to the times. It was a rare treat to me to hear these two great enthusiasts talk as we walked over the fields and went through the barns. Both Mr. Terry and Mr. Fenn have nice tools and farming machinery, clear up to the times, and Mr. Terry has just built the most beautiful tool-house I ever looked at or thought of. It is just "a thing of beauty," and, I dare say, to him "a joy for ever." I am going to give you a picture of it some time, any way. I want to mention right here that Mr. Fenn has a German in his employ who is so careful of his hoes and spades that he keeps a cloth in the proper place, with which to wipe off all the dampness and soil before they are put away for the night. After they are wiped so the bright polished steel is handsome to look at, he takes another cloth, saturated with oil, and oils all the bright parts. This absolutely prevents any rust on their bright surface; and if you do not know the difference between a bright shining hoe and one covered with heavy rust, when you start out to work just try two hoes—one rusty, the other bright. A man would accomplish a fourth more with the clean bright tool, and save his strength besides, because the bright hoe slides into the soil so easily, and the same soil slides off so that the tool will keep itself clean. Mr. Terry keeps the tools in his tool-house a good deal in the same way. They are nicely put away, and very handy and convenient doors right in front of each tool permit it to be reached at once without clambering over other tools. The same with his plows and harrows.

We are getting further and further from the subject of Elijah and his complaint, are we not? Well, let us see. I asked Mr. Terry if he was in the habit of lending these nice tools to his neighbors. He replied, that it was generally understood that he did not lend any thing; it was impossible for him to do so. The importance of succeeding with his work as he does succeed, depends greatly on having the right tool ready to be used the very hour it is wanted, and sometimes without the delay of even five minutes, when the weather is treacherous, as it has been this season. Mr. Fenn remarked, that one of the greatest troubles in his life was the trouble in regard to borrowing tools. As the conversation was started in this direction, one told a story about the annoyances he had suffered, and another told a story, and these stories reflected so sadly on my fellow-men that I felt badly about it, and have been feeling badly about it ever since. May be I told some of the stories too. When my conscience began to trouble me I remarked, "But, Mr. Terry, you surely have some neighbors who would take as good care, or better care, of borrowed tools than they would of their own, — who will always return a tool exactly as they promise to do, or sooner, who also recognize what it costs you

to keep such a stock of tools carefully housed, and will insist on paying you handsomely for the use of these tools?"

Now, I do not know that the above are exactly the words I used, but it is what I had in mind. Mr. Terry is a Christian man, and, as a rule, is not uncharitable. He sees the faults and failures of his brother-farmers; but I do not believe he exaggerates — at least, as a general thing. I wanted to hear him say that there were at least a few around him who were exceptions to the general run of people who borrow, and I also wanted to hear Mr. Fenn give a good report of at least a few of his neighbors of the township of Tallmadge, where every farmer seems to be thriving and prosperous, but I was disappointed. Mr. Terry said he did not know of any such. Mr. Fenn said the same thing substantially. Now, then, my friends, you and I are the folks who borrow tools. Do we average better than Mr. Terry's and Mr. Fenn's neighbors? I don't think we do, unless it is because we read bee-journals and agricultural papers, and their neighbors don't, but I can't believe that is so.

Elijah kept saying over and over, "And I, even I only, am left." Had he reflected a minute he would have recollected the fifty prophets that Obadiah mentioned; but he had in mind at the time only Ahab and Jezebel — those hateful persons and their worshipers, and he "sort o' forgot" about the rest who did not force themselves upon his notice. Now, I am inclined to think that it was the same with our good friends Terry and Fenn. When I asked them to recall to mind, they did not think of certainly a dozen good honest unselfish men — men who are never known to put anybody out of the way without making restitution so far as they could. Yet I think there must be at least a dozen in their own vicinity who have never troubled them by borrowing tools; or if they did, who gave value received, or more, in other ways. We remember things and people that vex us, but we don't remember things and people that don't vex us; that is, we forget favors, but we don't forget perplexities so easily.

Now, then, what is the result of settling down to the decision that mankind are so depraved we might as well give up? Elijah went away into the woods and sat down under a tree, and asked God to take him out of the world. He gave as a reason for his request, that he was not better than his fathers. He was discouraged and disappointed. He was displeased with God just as we are displeased with him when we complain in that wholesale manner of our fellow-men. Is it a good frame of mind to be in? Are we standing just where a Christian man ought to stand, when we decide that the bulk of mankind are so slipshod, lazy, indolent, selfish, that there is no use in trying to be neighborly? I hope friend Terry will excuse me if I seem to be personal. I do not mean to be; or, at least, I mean to put myself in the same boat when I criticize. In the potato-book, friend Terry tells us about what it usually cost one of his neighbors to get his potatoes dug. The neighbor

remarked that it generally cost him so much a bushel, including mowing down the weeds to get at the potatoes. Some of friend Terry's neighbors will have to mow down the weeds this fall before they can dig their potatoes, I fear; and the general appearance in his vicinity indicated that his neighbors—at least some of them—were not more go-ahead than he had given them credit for being; that is, in his writing on agriculture. And the need of reform is not confined to his own locality—it is widespread. But, dear friends, we make a sad, sad mistake when, in looking at these evils to be encountered right and left, we forget or omit to take into consideration the good traits as well. I shall have to confess right here that it comes so extremely natural for me to find fault, and to criticise, that I find it hard to get over my besetting sin in my *illustrations* even. Let me try here.

My cousin, Mr. Fenn, told a story something like this: He had a nice new harrow, with the teeth all bright, and the woodwork nicely painted, and he was so choice of it that he would not even let it be out one minute in the rain. A neighbor wanted it. He hated to say no, just as you and I do; and after a fair and square promise that it should come right straight back because he was going to need it, it went out of the barnyard. The time came when he wanted to use it, and business was hurrying, and there was no time to go after it, so he got along with a rickety old one. Finally he met the neighbor who borrowed it, and asked him about it.

"Why, I lent it to Dr. W., and he said he would fetch it right home, just the minute he got his ground fixed."

It did not come, and after a few days they got over needing any harrows. Some time in the middle of our last long cold winter, Mr. F. was passing the doctor's residence, and down in a sluice-way by the side of the road he saw some sharp points sticking up out of a huge block of ice. These points looked like the teeth to that nice new harrow. He is quite a man for dry jokes, so he stopped at the doctor's residence and called attention to the matter something in this way:

"Look here, doctor, there are some sharp-pointed instruments sticking out of that block of ice down there that seem to me a little dangerous. If somebody should get thrown out of a vehicle, and alight on them, it would be a terrible place to fall."

Having delivered his message, he turned around to go; but the doctor exclaimed, "Why, I declare, neighbor F., I do believe that those points are the teeth to your harrow, which I very carelessly neglected to return as I promised to do. I am very sorry—" etc. I do not know when the harrow got home—probably some time in the spring, when it got thawed out of the ice. Do you ask why I tell such a story as this when I am trying to make a plea for poor humanity? Well, I have told it because I want to say that, in all probability, Dr. W. is a good man in spite of this bad habit of his. As his profession implies, he is a public servant, and, I dare say, a whole-souled, and, generally

speaking, faithful servant. Borrowing tools, and leaving them to be frozen in blocks of ice, is a grievous fault, I admit; but it is by no means the worst fault a man can be guilty of. Perhaps it does not compare with things that you and I are guilty of at this very moment. Men who are guilty of these faults are, as a rule, those who are large-hearted, liberal, and accommodating. I do not recommend this kind of "large-heartedness," mind you, but I do recommend that we take hold of such obstacles fairly and squarely and cheerfully. What I mean by obstacles is sins like those I have mentioned. Don't get into a way of saying, "'And I, even I only,' am the only good man in the neighborhood." Why, what an awful thing it is for you to get the idea into your head that your neighbors are all full of faults, and that you alone are perfect! May be you are ahead of them in some thing—you ought to be—but very likely they are ahead of you in ever so many other things. "We be brethren" is a thousand times better to think, than to get up on our high-heeled shoes and keep saying over and over to ourselves, "I, even I only."

We have trouble with the railroad and express companies. We say they have no souls. Words and phrases have been coined, especially by the farming community, to express how these large corporations will cheat and swindle people. I am guilty too, dear friends, and I pray that God may forgive me, and help me to do better. I know I have taken the part of the railroad and express companies several times; and after having done so there is a kind of feeling in my heart that I have done right. I feel a great deal happier for having tried to think of their good qualities, than to settle down into such wholesale denunciations as we often do. Almost while I am writing, some money has been handed in from the railroad company for wax they lost out of a barrel last February. It took a long while, it is true; and I think I have been in the habit of saying, in an ironical sort of way, "It takes them for everlasting to right a wrong, if they ever *do* get to it at all." Such an expression is not right. Our shipments go over a great many different railroad lines, frequently. It is a complicated matter to trace it back and decide where the fault lies, even if it is possible to decide at all. Our short line of road, to whom the complaint is first made, receives only a few cents for handling a barrel of wax. In running over the papers for tracing up overcharges, shortage, etc., I have sometimes noticed that one company would receive an amount as small as nine cents, seventeen cents, or some odd amount of change, showing how carefully and minutely the profits were divided up. Now, with even this small pay they frequently have to go through a whole string of papers to get a little wrong righted. Is it any wonder that it takes them a considerable amount of time? Are we not, dear friends, a good way off from where a Christian ought to stand, when we speak as we do about their delinquencies? "We farmers are honest; but the railroad companies steal and lie and cheat, and won't make any thing right, even

where we place it plainly before their eyes." Does it help one along in life to get into this frame of mind? and does it help him on in the pathway to eternal life?

Such a spirit of complaining, and rushing to the conclusion that somebody is false while we alone are true, grows on one. It is like intemperance and other terrible sins. If you rush to the conclusion that one of your neighbors is dishonest, in a few days you will discover that another one is more dishonest, and so on. Pretty soon you become a misanthrope, hating your fellow-men; then you hate God, then creeps in the hideous demon of suicide, and the end is—where? The direct opposite of this is a bright faith in God and in man. A few days ago a difficulty was laid before me, between a purchaser and a shipper of queens. Because of some trifling misunderstanding, one called the other a liar. Why, my friends, such words are awful. No doubt the man who sent out the queens was in the wrong; but what he said was nothing near what might be called a deliberate lie. It is a fearful thing to get into such a state of mind over business matters that you feel like calling one of your fellow-men a liar, and still worse when you do so far forget yourself as to put it in words. When you get into such an attitude of mind that you feel like being cross at every thing and everybody, please remember the words of the angel of the Lord to Elijah—"Yet I have left me seven thousand." Since that history was written, the world has improved in godliness and righteousness. I think there is no question of that. There is iniquity abroad in our land, it is true; but we can always rest assured of this, when we feel tempted to give way to uncharitable thoughts and feelings: As we are, so is the world. The generality of your fellow-men average, in God's sight, about as you do. You have no right for a moment to insist, or to allow yourself to get into a way of thinking, that the rest are corrupt, and that you alone are pure. In fact, the truest indication that a man is getting to be low down in the scale of godliness is his inclination to exalt himself and to decry others. Find a really godly man—one whom the world unites in reverencing and respecting, and watch his conversation, and see if you can get him to denouncing people as a class, corporations as a class, or even political bodies. I tried the experiment only yesterday. An old friend who is known because of his Christian spirit and faultless life, took supper with us. I hope he will forgive me when I say that I purposely started him on politics, and led the way a little, to see if I could get him to speak ill of any of our political parties, or even of politicians as a body. His childlike simplicity, and faith in his fellow-men, as he plead for them all, one after another, was a lesson and a rebuke to me. May God help me to carry such a faith and charity and loving kindness toward all my fellow-men! to be ready to defend them, and to speak of their good qualities whenever they are assailed by this sort of unkind wholesale criticism that I have been trying to speak against in my talk to-day. How very, very closely does love to our fellow-

men come in with love to God! and this brings us back again to the words of Jesus to the wise lawyer:

Then one of them, which was a lawyer, asked him a question, tempting him, and saying, Master, which is the great commandment in the law? Jesus said unto him, Thou shalt love the Lord thy God with all thy heart, and with all thy soul, and with all thy mind. This is the first and great commandment. And the second is like unto it, Thou shalt love thy neighbor as thyself.—MATTHEW 22:35-39.

For a month or two back I have been very happy, and I think the happiness has, a great deal of it, come along in the line I have just been talking about to-day. When somebody or some class of people have been censured severely, I have tried what the effect would be to take their part, and remonstrate against unjust and uncharitable criticism. I have tried to think of the better phases of humanity; and doing so I have become happier, and, I trust, better myself. It needs only a very little remonstrance, or a very little suggestion, kindly put, to stop conversation when it starts in this line. People are usually inclined to assent when we put in a plea for an absent one, and I have generally found them quite ready to take up with the better side of almost anybody, when it is suggested to them in a Christianlike spirit. Such an attitude is a hopeful one. One who loves God and his fellow-man is always hopeful. He is always glad that he is alive, and, no matter what trials or obstacles beset him, he has something to rejoice over.

Years ago, during my first Christian experience, I mentioned that there were times when God's love seemed very precious to me—that I could feel, as it were, a sort of companionship—that I was not alone. Well, I have felt this a good deal lately. Sometimes bitter denunciations have been uttered in regard to certain political parties, or certain religious sects, it may be. When I have taken the part of these people or classes, a feeling has come over me as though some presence were near; and this presence seemed to say, "Dear friend, you are getting on the right track; go on, and fear not." And when I have put in a plea in the way I have told you, I have thought of this text I have quoted: "I have left me seven thousand in Israel, all the knees of which have not bowed to Baal." There is something wonderfully comforting in this thought: That God's own image is still to be found in humanity, with all its sins and weaknesses, and that often only a little encouragement is needed to bring out this image of God, and let it shine forth. Who could for a moment think of considering life a burden, or mankind as enemies, or the pleasures and pursuits of the world as unsatisfying, while his heart is filled with these bright hopes that only a faith in God can inspire? There is a little verse in the last chapter of Zephaniah that I sometimes think of at such times. It is a little odd and singular; but yet after such experiences as I have told you of, there is wonderful beauty in it.

The Lord thy God in the midst of thee is mighty; he will save, he will rejoice over thee with joy; he will rest in his love, he will joy over thee with singing.—ZEPHANIAH 3:17.

GLEANINGS IN BEE CULTURE.

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A. I. ROOT,
EDITOR AND PUBLISHER.
MEDINA, O.

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For Clubbing Rates, See First Page of Reading Matter.

MEDINA, SEPT. 15, 1885.

Thinketh no evil.—Cor. 13. 5.

OUR SILVERHULL BUCKWHEAT AT THIS DATE.

TO-DAY, Sept. 14, the bees are just roaring on our Silverhull buckwheat. If it is not beaten down by the storms, nor killed by premature frost, we have the promise of an abundant crop.

MORE SLANDERS ON THE BEE-MEN.

AND this time it is the N. Y. *Witness* that goes on fearfully about the way that honey is adulterated, comb honey at that, and ends up by saying, "Let us have pure honey, Mr. Bee-man." And now we say, Mr. *Weekly Witness*, be sure you are right, before you accuse your neighbors of fraud.

EXHIBITS OF HONEY ON THE FAIR-GROUND.

AS we go to press we are busy filling the little building, 12 x 16, which has been put up at our own expense on our county fair-ground. The building cost about \$103, and is to be permanently our property. It covers a pyramid of packages of honey, both comb and extracted. The latter embraces everything from an iron-jacket can down to a paper pail of honey small enough to be retailed at a nickel. The managers of our fair give us the ground for the building and permit us to retail honey during the three days of the fair, in consideration of the display we make, and that we keep a man present to talk with bee-men, and explain all about a hive of bees kept near by, and the various implements for bee culture kept on exhibition.

GOODS FOR NEXT SEASON'S USE.

ON hives and other fixtures that are purchased now, to be used during the season of 1886, we will allow a discount of 5 per cent; and this offer will be good until Nov. 1. We mention it thus early, that the friends who have small orders to make this fall may be induced, by the discount, to have heavier articles for next season go with them, thus in effect saving freight. Simplicity hives, honey-extractors, section boxes, brood-frames, etc., would come under the discount given. Chaff hives would not, as they are mainly intended for winter use. This discount comes in addition to all other discounts given for other reasons. Comb fdn. ordered now, to be used next season, will be subject to a discount of 10 per cent, and the above-mentioned 5 per cent, from our list price. We do not change our prices on comb fdn., because we are unable to say how the wax market will stand next spring.

THE STATE FAIR AT COLUMBUS: THE HONEY YIELD FOR OHIO, ETC.

PERHAPS I owe an apology to the bee-friends in Columbus for not being present the last day of the convention held during the fair. I visited the Agricultural College and Experimental Farm early Fri-

day morning, and was prevented by a rain from getting around as I had intended. The show of comb honey at the State Fair was not extra this year, owing to the fact, probably, that the yield of honey round about Columbus has been rather poor. The northern part of the State of Ohio, and also in Michigan and other northern States, the yield seems to have been excellent on the whole. The honey on exhibition was mostly built without separators. This of itself, however, need not necessarily have made it not first class in appearance; but coupled with the poor season it would probably have that effect. The nicest honey we have ever handled we are selling now, and it was all secured without the use of separators; but the sections are the narrow ones, only seven to the foot.

MATTER THAT WE CAN NOT FIND ROOM FOR.

IT pains me almost every day to be obliged to forego the pleasure of publishing good letters on many subjects. For instance, some very kind words, and some very able papers, have been written in regard to the "mix" in GLEANINGS; but as the matter has been sufficiently discussed already, it does not seem to me that we can afford to take space for it any further; the same in regard to "dry fires." It seems to me that this question, like a host of others, can not be settled definitely. Both parties are right in one sense, and both parties are wrong in one sense. It seems to be more a matter of opinion in regard to terms, than because there is any thing further to be brought to light; and, like many other questions that are hotly discussed at great length, I can not discover that there is any important point involved in the matter. May be I am not posted. If so, it is my misfortune, and I shall be glad to hear what the friends may have to say, that I may become better posted. But I hope you will excuse me for declining to put them in print, unless something very much more important is submitted than has been brought forward.

REDUCTION IN PRICES OF THE PASTEBOARD BOXES, OR "CARTONS," FOR HOLDING THE ONE-POUND 4 x 4 1/2 SECTIONS.

AN immense trade has sprung up in these boxes; and as a consequence of being able to give the manufacturer larger orders, we are able to put the prices as follows: Single boxes, 2 cts.; in lots of 25, 10 the flat, 30 cts.; 100, \$1.00; 1000, \$9.00; 10,000, \$80.00. If wanted by mail, add \$1.00 per hundred for postage. Colored lithograph labels, \$3.00 per 1000. There are two different kinds of these labels, so you can have the two sides of the carton show a different picture. Where you wish the labels pasted on before shipment, add 10 cts. per hundred for putting them on. Sample box by mail, with a label on each side, 5 cts.

Your name and address, and the kind of honey, may be printed on these labels, the same as other labels. The charge for so doing will be 30 cts. per 100; 250, 50 cts.; 500, 75 cts.; 1000, \$1.00.

There has been quite a little call for a similar box to hold a 2-lb. section. The trouble of getting this up is, that there is no regular size for a 2-lb. section, as there is for a 1-lb. section. We can have them made, however, to order, for just about double the above prices, and the manufacturers could not very well make less than a thousand of any particular size. If the friends will agree on the dimensions of a 2-lb. section, we can have a box made for about a half more than the one-pound.

KIND WORDS FROM OUR CUSTOMERS.

Please forward, as soon as possible, goods named in order. I sold the other crate of smokers all in a day, and they went like "hot cakes." S. FORT.
State Center, Ia., July 23, 1885.

The goods ordered of you July 2d arrived on the 18th inst. Every thing was entirely satisfactory in time of transit and quality of goods. G. W. MORE.
Puyallup, Wash. Ter., July 20, 1885.

The queen you sent me came all safe, and is now doing her duty. She was the best-looking one I ever received. Many thanks. L. H. LANGWORTHY.
Riceville, Pa., August 10, 1885.

I thought that I would write you that I have received the honey-labels all right. They are very much nicer than the one in the sample-book, and are the neatest and prettiest honey-labels I ever saw. Bees are doing pretty well now. Slaght's, Colo., July 12, 1885. W. H. PRICE.

A notice of the ABC of Carp Culture appeared in the last issue of the *Egis*, a copy of which I send. I have carefully read the work, and think it and the ABC of Potato Culture should be in the hands of all intelligent agriculturists. WM. H. CATHER.
Ashville, Clay Co., Ala., July 3, 1885.

I sold out my bee business last fall, but I like your journal well enough to continue taking it, whether I invest in bees again or not. Continue your footnotes and Home Papers, by all means. I should be glad to hear more of Florida, Cuba, and Apis dorsata. E. LOOMIS.
Anamosa, Ia., June 21, 1885.

I received the ABC book, together with GLEANINGS and your price list, last Saturday. I have run my eye over the book, and I see a great improvement on the copy I had lent me. I am pleased and delighted with the book, and I consider it well worth the price. ALFRED DONBAYAND.
New York, Feb. 9, 1885.

The select imported queen was received all right; some of her queens are out, and are perfect beauties. Thanks for promptness. I know what it is to receive queens by return mail, and shall try to fill my orders hereafter in like manner, as nearly as possible. I like to treat customers just as I like to be treated myself. C. WECKESSER.
Marshallville, O., July 20, 1885.

SENDING NUCLEI TO THE ROCKY MOUNTAINS.

The two-frame nucleus ordered of you came through in splendid condition. I don't know what the little fellows thought when I turned them loose up here in the Rocky Mountains, 10,000 feet above sea-level; but I do know that they went to work like "Trojans," and I never saw bees do better in my life. J. C. PADDOCK.
Brookside Ranch, Leadville, Colo., Aug. 10, 1885.

The select tested queen to replace you sent Monday, the 24th inst., arrived in good shape on the evening of the 25th. On the morning of the 26th I killed the drone-laying queen, got this queen from the postoffice, and introduced her in the afternoon. She was accepted by the bees the next day, and laying eggs. She is a fine queen and a good layer, for she has now laid about half as many eggs as the other did during the whole time I had her. Please accept thanks. A. VANDEREIKE.
Lake Mills, Wis., Aug. 29, 1885.

OUR 24-LB. SCALE.

I received the double-beam scale and other goods, in first-class shape. A neighbor said the other day, "It's queer you have to send to Root for every thing." He then hunted up his price list of scales, and could find nothing that would suit us for less than double the price of your scales. It's worth something to know that you will get honest goods for your money, and that they are safely packed to ship. T. YOUNG, JR.
Lasalle, Ill., Aug. 8, 1885.

[Many thanks for your kind words, friend Y., and I will try to deserve them.]

I received the bill of goods you sent, long ago, and it seems that I might have reached the limit of your patience in waiting for me to remit the balance. But your patience and kindness are only exceeded by your promptness and care in sending the goods. This is a good bee country. The season has been almost a failure so far. The main honey harvest is from sourwood, which opens in July.

W. J. TIDBALL.
Kilby, Alexander Co., N. C., June 22, 1885.

This is to thank you for the timely and excellent Home Paper in your issue for Jan. 15. It is an excellent lay sermon, and came from the heart, and will strike many, and I hope, call a halt. Could it be preached from all the pulpits in the land—that is, the text as appropriately handled, it would do great good, and check a little the struggles which make so many Americans unhappy, and so many homes miserable. There is not, and never has been, such a tendency in the old "slave States" to "drive for wealth." There is more ease and leisure, if less of luxury, and I regard it as well that it is so. I have had to struggle against the very tendency to overdo, and yet I often find myself wishing that I had a less exacting business and more freedom. It is not all caused by a desire to display, but more to surround the house of the dear ones at home with comfort, which prompts so many Americans to strive as they do. J. W. PORTER.
Charlottesville, Va., Jan. 27, 1885.

Allow me to express my sincere thanks for the promptness and care with which you filled my order, together with the good judgment displayed in sending just what I wished for, as I could not have been better suited had I selected the articles myself.

The ABC book pleases me very much; it is really an excellent work on the subject, and should be found in every library, also in possession of every one who intends embarking into this most interesting and instructing subject. The further I read, the more I like it; for its arrangement is so perfect that, should the bee-keeper find himself in any predicament, or want of information, it may be found and read in this valuable book in a moment, leaving the apiarian to proceed knowingly, and without further trouble.

GLEANINGS is a very good paper on the subject, and should be in the hands of every progressive bee-keeper, that he may read and be benefited by the experience of all the noted apiarians, as well as to give his own, or ask for information in regard to difficulties which may arise. Taken in all, I would not part with either, for any consideration, were it impossible to procure another. C. H. THEBERATH.
Newark, N. J., Aug. 21, 1885.

I have inclosed a dollar bill in this to renew my subscription to GLEANINGS. I am sorry I have neglected it so long past the time it ought to have been paid, for I don't want to miss one number, for myself and family are greatly pleased with it, especially its Home Papers and children's columns, and all of us only wish we could be more personally acquainted with the man who can write such nice papers. I see some readers are wishing you to leave out Home Papers, articles on fish, potatoes, etc. For my part I should be very sorry to see it done, for those Home Papers are doing a work that can not be done in any other way, for hundreds see them who would not take a religious paper at all. I see a number of papers myself on various subjects, but I should like to see GLEANINGS continue as it is. Go on, Bro. Root, and may God bless you in your work.

As to bees, I am not a very large bee-man. I bought three swarms two years ago this spring; increased to four the same summer; went into winter quarters last fall with the same number (having no increase at all last summer); lost one in wintering and had three this spring—two weak and one moderately strong. I have had but one swarm this summer, and that went off to the woods after hiving it two or three times, so that I am just where I started, as regards number, though I can not say that I am any money out of pocket by bees, for I think the honey I have received from them has more than paid all I have spent on them the two years past. It has been from 30 to 40 lbs. per colony. This year does not seem to be a very good one for honey. We had but little white clover, and that is our chief crop, as we have no basswood any thing of the kind here. I have wintered each winter on summer stands at the east end of the

house, with rough boxes outside of hives, packed with chaff. I left in all the frames just as they were in summer, and entrance all open, with mats and brood-frames and chaff cushions on top of mats.

Oil City, Pa., Aug. 3, 1885.

H. C. FINCH.

HOW AN ABC SCHOLAR "ROLLS UP THE BARRELS OF FINE HORSEMINT HONEY."

I don't know that I can tell you why it is that I have for a long time wanted to write, thanking you as I feel I ought, for the many good things you have taught. When I was introduced to you in Dec., 1882, we received the sample copy of GLEANINGS, and for some time afterward I also thought I objected to the mixed matter in GLEANINGS. But after a better and more intimate acquaintance of three years, I want to say that any other GLEANINGS, than GLEANINGS as it is, would not be GLEANINGS at all. In greedily devouring, as it were, the "bee-talk" of GLEANINGS the first year, and its inimitable offspring, the ABC book, I could see queen-rearing, extractors, barrels of extracted honey, Italian bees, etc., as one sees objects in a dream; but through your teachings I have been enabled to see it all practically in my own apiary, and to roll up the barrels of fine horsemint honey, two, three, four, and five deep. Besides the enjoyment, or, as you say, "rare fun" of working with the bees, I have become a closer student of nature; and many beautiful and strange things have unfolded before me. "Myself and My Neighbors," and "Our Homes," have enabled me to see human nature in a different and better light, and to make our own duty plainer in our daily walk toward our "home above."

H. A. GOODRICH.

Massey, Tex., Aug. 24, 1885.

[Friend G., your letter makes me almost tremble in my shoes, as such letters have many times before, for fear I shall in some way prove unworthy of such very, very kind words; and all I can say at such times is, "May God help me to come even a little way toward deserving it all."]

[ADVERTISEMENT.]

The Largest Cabbage Growers in the World (W. M. Johnson & Co., of Chicago), use upwards of five thousand acres of land for growing cabbages. Last season they manufactured nineteen thousand six hundred barrels of sourkroot, besides shipping four hundred and sixty-seven carloads of cabbages to eastern cities. They use and recommend Tillinghast's Puget-Sound Cabbage Seeds. The disseminator of this renowned brand of seeds, Isaac F. Tillinghast, of La Plume, Pa., in order to introduce them into every county in the Union, has organized a Seed and Plant Growers' Association. One reliable party in each town in the Union is being enrolled as special agent, and is supplied with seeds in trade marked packages, and also instruction books which will enable any one to grow cabbage-plants successfully anywhere. Parties desiring seeds or plants, will, upon application to Mr. Tillinghast, be furnished with the addresses of agents nearest them from whom they may be obtained. Purchasers are thus saved unnecessary express charges, and assured of obtaining the best strain of cabbage seeds or plants which can be procured.

This association thus furnishes one man in each town—the appointed agent—a good cash-paying business in selling seeds and growing and supplying plants. There are still many excellent localities unoccupied, and any one so situated as to act as agent for this association should address Mr. Tillinghast as above, for particulars in regard to it.

Mr. Tillinghast has also just put upon the market a "Cabbage-Pest Powder" which is entirely harmless to the plant at any stage of its growth, and also harmless to persons eating them, yet the most effective destroyer of lice, fleas, and worms, which has ever been compounded. It retails at 24 cents per pound.

18d

LOOK HERE!

To introduce my strain of pure bright Italians, equal to any in the United States, I will offer for August, tested queens, \$1.00 each; extra fine, selected, \$1.50 each; one-frame nucleus, consisting of one extra select queen, one frame of brood, ½ lb. bees, for \$2.00. If you want any bees, send me your address on postal and I will send you sample by return mail. Beeswax or honey taken in exchange.

15tfab

THOMAS HORN,

Box 691, Sherburne, Chen. Co., N. Y.

The best Queens out.

I will furnish queens from July 1 to September 1 for one dollar; warranted tested, \$2.00; after then the price will be the same as in A. I. Root's list. Queens all bred from an imported mother.

G. F. SMITH,

Bald Mt., Lackawanna Co., Pa.

16tfdb

◀ FOR SALE. ▶

2) Colonies of Pure Italian Bees in Langstroth frames, straight pretty combs, with honey, in DOUBLE-WALL OBSERVATORY HIVES; Been used two seasons with one-pound boxes, and for extracting. Complete on board cars, for \$8.00 per colony, or \$14.90 for the lot.

JAMES CRAIG,

MT. MERIDIAN, VA.

16 17 18d

MUTH'S

HONEY-EXTRACTOR,

SQUARE GLASS HONEY-JARS,

TIN BUCKETS, BEE-HIVES,

HONEY-SECTIONS, &c., &c.

Apply to CHAS. F. MUTH, CINCINNATI, O.

P. S.—Send 10-cent stamp for "Practical Hints to Bee-Keepers."

1tfdb

FULL COLONIES PURE ITALIAN BEES FOR SALE.

Address for sample workers,

18 19d S. F. REED, North Dorchester, N. H.

FOR SALE. 25 COLONIES OF ITALIAN

and hybrid bees in 1½-story-Simplicity hives (painted). One colony, Italian, \$6.00; one colony of hybrids, \$5.00. Five or more colonies, 10% discount. Delivered at express office. Address

18d

A. B. JOHNSON, Elizabethtown, Eldon Co., N. C.

SECOND-HAND FOOT-POWER SAWS.

We have, subject to our order, two Barnes foot-power buzz-saws, which we have taken from parties whose business has enlarged so much that they have no further use for them. They are all nearly new, in good order, having all the latest improvements. We will sell them for one-fourth less than the regular retail price; that is, we will sell a \$40.00 saw for \$30.00.

A. I. ROOT, Medina, O.

Queen-Rearing.

How to rear queens by the best and simplest methods. For particulars address

16tfdb

HENRY ALLEY, WENHAM, MASS.

WANTED. A SITUATION with some bee-keeper. I have had one season's experience. Address **L. C. DUNLAP,**

18d

NASHUA, IOWA.

FOR SALE. ONE TO FIFTY COLONIES OF BEES.

17-18d

W. S. WARD, Fuller's Station, Albany Co., N. Y.

ADAMT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column.

3b1fd

CONVENTION NOTICES.

The Maryland, Virginia, and West-Virginia Bee-keepers' Convention will meet at Hagerstown, Md., in the court house, on Wednesday, Oct. 21, 1885, at 10 A. M. By order of D. A. PIKE, Pres.

The N. J. and Eastern Bee-keepers' Association will hold their Semi-annual convention in Grand-Jury room of Court-House, in Trenton, N. J., on Thursday and Friday, Nov. 5 and 6, 1885, at 10 o'clock A. M. We extend a cordial welcome to all. W. M. B. TREADWELL, Sec.

The Western Bee-keepers' Association will hold its fourth annual meeting in Independence, Mo., Thursday and Friday, Oct. 10 and 11, 1885. The association will endeavor to make this the most interesting meeting yet held, and will spare no pains within its means to make it in every sense valuable to all. Several of our most prominent bee-keepers have signified their intention to be present. C. M. CRANDALL, Sec.

We have received the following from the Kentucky State Bee-keepers' Association:

Dear Sir and Bro.:—You are invited to meet with us in the State Bee-keepers' Society, in Walker Hall, Covington, Ky., on the 23d and 24th of September, 1885. This is expected to be the most interesting meeting ever held in the State. Rev. L. L. Langstroth, the father of American apiculture, and Mr. Charles Dadant, the great comb-foundation manufacturer, will meet with us, as well as many other noted apiarists. We hope to see you at the Convention. L. JOHNSON, President.

J. T. CONNLEY, Sec'y.

EXCHANGE DEPARTMENT.

Notices will be inserted under this head at one-half our usual rates. All ads. intended for this department must not exceed 5 lines, and you must say you want your ad. in this department, or we will not be responsible for any error.

WANTED.—In exchange for new varieties of strawberries and raspberries, Plymouth Rocks, Light Brahmas, Pekin Ducks, new varieties of potatoes, and small-fruit plants, cherry and quince trees. P. SUTTON, Exeter, Luz. Co., Pa. 16-23db

WANTED.—Extracted fall honey (buckwheat or goldenrod) in exchange for hives, sections, etc., either from my catalogue, or made to order. Will pay white-clover prices for a few hundred pounds. C. W. COSTELLO, Waterboro, York Co., Maine.

WANTED.—To exchange bees for small planer for wood, also one for iron. 18-19-20d HENRY PALMER, Hart, Mich.

WANTED.—To exchange for bees, 10,000 Mammoth-Cluster Raspberry-plants; \$1.00 per 100; \$6.00 per 1000; also 20,000 Strawberry-plants, Crescent Seedling, Cumberland Triumph, Sharpless, and Glendale; 75c per 100; \$4.00 per 1000. 18d W. J. HESSER, Plattsmouth, Neb.

WANTED.—To exchange No. 1 model printing-press, self-inker, chase 5x7½ inches, type and type-cases, for Italians or hybrid bees. 18-19d A. P. SHARPS, Exeter, Luzerne Co., Pa.

WANTED.—To exchange for well-ripened honey fit for winter stores, thoroughbred P. Rock fowls, pure Corbin strain; a Franz & Pope family knitting machine, almost new; a new model-maker's drill-lathe, eight-inch swing, two-foot bed. 18-19d M. FRANK TABER, Salem, Ohio.

WANTED.—To exchange hybrid bees and queens for fdn., fdm., mill, honey-extractor, saw-mandrel, or others. Will exchange Blue-Ridge Raspberry-plants for fdn. Correspondence solicited. 18tdb JOHN W. MARTIN, Greenwood Depot, Alb. Co., Va.

FULL COLONIES FOR \$3.00.

18tdb

R. HYDE, Alderly, Wis.

W. Z. HUTCHINSON,

ROGERSVILLE, GENESEE CO., MICH.,

Can still furnish Italian queens, bred from the best of mothers, and reared in full colonies. Single queen, \$1.00; six for \$5.00; twelve or more, 75 cents each. Tested queens, \$2.00 each. Make money orders payable at Flint. 18tdb

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column. 3tdf

JOB LOT OF WIRE CLOTH

AT GREATLY REDUCED PRICES.

SECOND QUALITY WIRE CLOTH AT 1½ CTS. PER SQUARE FT.

SOME OF THE LISTS TO WHICH THIS WIRE CLOTH CAN BE APPLIED.

This wire cloth is second quality. It will answer nicely for covering doors and windows, to keep out flies; for covering bee-hives and cages for shipping bees; making sieves for sifting seeds, etc. Number of Square Feet contained in each Roll Respectively.

Inches Wide.	No. of Rolls.
10 3/4	3 rolls of 75, 72 s. f.
12 1/2	2 rolls, 100 s. f. each.
20	3 rolls of 166 s. f. each.
22	4 rolls of 181, 1 of 169 s. f.
24	6 rolls of 200, 1 of 180, and 1 of 139 s. f.
36 1/2	23 rolls of 217, 38 of 216, 2 of 195, 1 of 156, 1 of 122, 2 of 215, 1 of 210 s. f.
28	16 1/2 rolls of 223, and 2 of 224 s. f.
34 1/2	7 1/2 rolls of 281 s. f.
36	
38 3/4	28 rolls of 316, 3 of 285, 2 of 317, 1 each of 190, 632, 136, and 215 s. f.
42	1 roll of 245 s. f.
44	2 rolls of 366, 1 of 318 s. f.
46	1 roll of 152 s. f.
48 1/2	10 rolls of 400, 1 of 200, 1 of 50 s. f.

FIRST QUALITY WIRE CLOTH AT 1½ CTS. PER SQUARE FT.

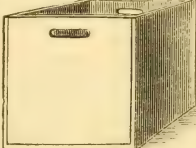
The following is first quality, and is worth 1½ cts. per square foot. It can be used for any purpose for which wire cloth is ordinarily used; and even at 1½ cts. per sq. ft. it is far below the prices usually charged at hardware and furnishing stores, as you will ascertain by making inquiry. We were able to secure this very low price by buying a quantity of over one thousand dollars' worth.

Inches Wide.	No. of Rolls.
10 3/4	1 roll of 155 s. f.
22	1 roll each of 83, 143, 92 s. f.
24 1/2	43 rolls of 200 sq. ft. each; 1 each of 80, 95, 120, 168, 190, 250, 150, 140 sq. ft.
26 3/8	rolls of 216 sq. ft. each; 1 each of 195, 195, 200, 200, 201, 227, 201, 204 sq. ft.
28 1/2	rolls of 223, 6 of 224, 3 of 219, 8 of 227, 7 of 224, 2 of 219, 1 of 117 sq. ft.; 1 each of 70, 210, 245, 257, 240, 215, 110, 93, 82 sq. ft.
30 3/8	rolls of 230 sq. ft.; 1 each of 23, 137, 115, 117, 125, 125, 230, 225, 227, 227, 235, 275, 240, 157 sq. ft.
32 1/2	1 of 206, 7 of 206, 2 of 233 square ft.; 1 each of 233, 251, 117 sq. ft.
34 1/2	rolls of 283 sq. ft. each; 1 each of 62, 113, 198 sq. ft.
36 1/2	rolls of 200 sq. ft. each; 2 of 72, 1 each of 288, 150, 279, 285 sq. ft.
38 1/2	roll each of 200 and 316 sq. ft.
40 1/2	roll of 233 square feet.
42 1/2	roll of 350 square feet.
46 1/2	roll of 122 square feet.

A. I. ROOT, Medina, Ohio.

POTATO-BOXES

(TERRY'S).



These are made of basswood, lined with galvanized iron. The galvanized iron gives strength, and the basswood strength and lightness. These hold exactly a bushel when level full, and may be piled one on top of another. Although they are made especially for potatoes, they can be used for fruit, vegetables, picking up stones on the farm, and a thousand other purposes. When piled one above the other, they protect the contents from the sun and rain; and from their shape a great many more bushels can be set into a wagon than where baskets are used. They are also much more substantial than baskets.

Price 25 c each; 10, \$2.25; 100, \$20.00. In the flat, including nails and galvanized iron, \$1.75 for 10; 100, \$16.50; 1000, \$150. A. I. ROOT, Medina, O.

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WANTED.—To exchange salt mackerel in 20-lb. pails, for good extracted honey.

E. E. LING, 11 Silver St., Portland, Maine.

WANTED.—To exchange one lamp-nursery, scarcely used, and one heavy circular-saw mandrel, 1 1/2-16-inch shaft, in good order, for any thing useful to a bee-keeper.

1914b J. A. GREEN, Dayton, Ill.

Names of responsible parties will be inserted in any of the following departments, at a uniform price of 20 cents each insertion, or \$2.00 per year.

\$1.00 Queens.

Names inserted in this department the first time without charge. After, 20c each insertion, or \$2.00 per year.

Those whose names appear below agree to furnish Italian queens for \$1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen be reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delay as may be unavoidable. Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with *, use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will besent for \$1.00 before July 1st, or after Nov. 11 wanted sooner, or later, see rates in price list.

*A. I. Root, Medina, Ohio.

*H. H. Brown, Light Street, Columbia Co., Pa. 1911f

*Paul L. Viallon, Bayou Goula, La. 1911d

*S. F. Newman, Norwalk, Huron Co., O. 1911d

*Wm. Ballantine, Sago, Musk Co., O. 1911d

*D. G. Edmiston, Adrian, Len. Co., Mich. 1511d

*S. G. Wood, Birmingham, Jeff. Co., Ala. 1911d

*S. C. Perry, Portland, Ionia Co., Mich. 1511d

*H. J. Hancock, Solomon Springs, Benton Co., Ark. 1511d

*E. T. Lewis, Toledo, Lucas Co., O. 3-1

*C. C. Vaughn, Columbia, Maury Co., Tenn. 15-19

S. H. Hutchinson & Son, Claremont, Surry Co., Va. 5-1

*E. Kretschmer, Coburg, Mont. Co., Iowa. 1511d

D. McKenzie, Camp Parapet, Jeff. Parish, La. 1911d

*J. J. Martin, N. Manchester, Wabash Co., Ind. 7-19

Cornelius Bros., LaFayetteville, Dutch. Co., N. Y. 7-19

Peter Brickley, Lawrenceburg, And. Co., Ky. 15-23

Ira D. Alderman, Taylor's Bridge, Samp. Co., N.C. 1911d

J. W. Keeran, Bloomington, McLean Co., Ill. 11-21

*Haines Bros., Moons, Fayette Co., O. 15-23

G. F. Smith, Bald Mount, Lacka Co., Pa. 1511d

Jos. Byrne, Baton Rouge, Lock Box 5, East Baton Rouge Par., La. 1511d

S. P. Roddy, Mechanicstown, Fred. Co., Md. 15-19d

*Calvin Bryant, Palestine, And. Co., Tex. 15-21

*J. B. Hains, Bedford, Cuyahoga Co., O. 15-19

EXCHANGE DEPARTMENT.

Notices will be inserted under this head at one-half our usual rates. All ads intended for this department must not exceed 5 lines, and you must say you want your ad in this department, or we will not be responsible for any error.

WANTED.—In exchange for new varieties of strawberries and raspberries, Plymouth Rocks, Light Brahmas, Pekin Ducks, new varieties of potatoes, and small-fruit plants, cherry and quince trees. P. SUTTON, Exeter, Luz. Co., Pa. 16-23db

WANTED.—Extracted fall honey (buckwheat or goldenrod) in exchange for hives, sections, etc., either from my catalogue, or made to order. Will pay white-clover prices for a few hundred pounds. C. W. COSTELLO, Waterboro, York Co., Maine.

WANTED.—To exchange bees for small planer for wood, also one for planer. 18-19-20d HENRY PALMER, Hart, Mich.

WANTED.—To exchange for bees, 10,000 Mammoth-Cluster Raspberry-plants; \$4.00 per 100; \$6.00 per 1000; also 20,000 Strawberry-plants, Crescent Seedling, Cumberland Triumph, Sharpless, and Glendale; 75c per 100; \$4.00 per 1000. 18d W. J. HESSER, Plattsmouth, Neb.

WANTED.—To exchange for well-ripened honey fit for winter stores, thoroughbred P. Rock fowls, pure Corbin strain; a Franz & Pope family knitting-machine, almost new; a new model-maker's drill-lathe, eight-inch swing, two-foot bed. 18-19d M. FRANK TABER, Salem, Ohio.

WANTED.—To exchange hybrid bees and queens for fdn., fdu. mill, honey-extractor, saw-mandrel, or offers. Will exchange Blue Ridge Raspberry-plants for fdu. Correspondence solicited. 1811db JOWN W. MARTIN, Greenwood Depot, Alb. Co., Va.

WANTED.—To exchange Syrio-Italian and Red-Clover Italian bees and hybrids in L. and Simplicity hives, for foot-power saw in good order (Barnes preferred), incubator, or printing-press. 18d J. SINGLETON, 34 Public Square, Cleveland, O.

WANTED.—To exchange thoroughbred late spring Brown Leghorn chickens or cockerels for Light or Dark Brahmas, Plymouth Rocks, Langshans, Partridge Cochins, White Leghorns, or others. Must be pure. Correspondence solicited. 18d G. A. FARRAND, Rockport, Cuy. Co., O.

Hive Manufacturers.

Who agree to make such hives, and at the prices named, as those described on our circular.

A. I. Root, Medina, Ohio.

P. L. Viallon, Bayou Goula, Iberville Par., La. 1911d

C. W. Costello, Waterboro, York Co., Me. 21-23

Kennedy & Leidy, Higginsville, LaF. Co., Mo. 1511d

E. T. Lewis, Toledo, Lucas Co., Ohio. 3-1

H. F. Moeller, cor. 5th st. and Western Ave., Davenport, Ia. 3-1

E. Kretschmer, Coburg, Montgomery Co., Ia. 1711d

C. P. Bish, Petrolia, Butler Co., Pa. 15-1

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column. 3b11d

HONEY COLUMN.

CITY MARKETS.

KANSAS CITY.—*Honey.*—We now report a very firm market, with some advances in prices, though the trade takes hold "gingerly" as yet, and squealing like pigs when the advance is quoted them. We are now holding for 16¢/17c on fancy white 1-lb. sections; 15¢/16c for 2-lb., and 12¢/13c for California. We are short on fancy 1-lb. sections, and would suggest this as a good time to ship and realize good prices. Extracted, a little firmer, at about same prices; viz., Miss. La., and Tex., 4¢/6c.; Cal., 7¢/8c. White clover, 7¢/8. *Beeswax.*—Unchanged, 20¢/25, according to quality. **CLEMONS, CLOON & Co.**
Cor. Fourth & Walnut Sts., Kansas City, Mo.

BOSTON.—*Honey.*—We have received quite a large stock of honey, mostly from Vermont, and the quality is very fine. We are doing the best we can to keep the price up, where bee-keepers can get something for their honey. One of the largest producers sold his entire crop at a very low price, and it is being sold here at a price that would give the bee-keeper nothing. We still hold our price, 16¢/18c for 1 pound, 14¢/16c for 2 pounds. Extracted, 6¢/8c. *Beeswax*, 30c. **BLAKE & RIPLEY,**
Sept. 21, 1885. 57 Chatham St., Boston, Mass.

CINCINNATI.—*Honey.*—No change whatever in the honey or beeswax market since my last.
Sept. 25, 1885. **CHAS. F. MUTH,**
Cincinnati, Ohio.

CHICAGO.—*Honey.*—Honey is coming forward in amounts about equal to the demand. White comb honey in one-pound frames, or about, brings 15¢/16c when put up in the small crate, and frames all scraped clean, and put in so that it won't chafe. Buckwheat or dark comb is about unsalable, extracted selling from 5¢/8c according to quality.
Beeswax, 23¢/25c. **R. A. BURNETT,**
Sept. 24, 1885. 161 So. Water St., Chicago, Ill.

CLEVELAND.—*Honey.*—Honey seems to be unusually dull for this time of year. It moves very slowly at 14¢/15 cts. for best 1-lb. sections. Old honey at 10¢/12c. shares the same fate. Extracted is dull at 7¢/8. *Beeswax*, 22c. **A. C. KENDEL,**
Sept. 21, 1885. 115 Ontario St., Cleveland, O.

MILWAUKEE.—*Honey.*—This market is in good shape for shipments of honey. Choice white 1-lb. sections salable at 17¢/18c. Dark, not in demand. Price nominally, 12½¢/15c. Extracted, white, in 100-lb. kegs, in good demand at 8c. *Beeswax*, dull. Quotable at 25¢/28c. **A. V. BISHOP,**
Sept. 23. 142 W. Water St., Milwaukee, Wis.

DETROIT.—*Honey.*—One-pound sections are selling readily at 16¢/17 c. **A. B. WEED,**
Sept. 21, 1885. 407 Woodward Ave., Detroit, Mich.

INDIANAPOLIS.—*Honey.*—We are trying to build up an exclusive honey trade. Being also producers, it gives us some advantage. We are disposing of lots on commission, and would be pleased to hear from those who would like to try our market.
Sept. 12, 1885. **FRANK L. DOUGHERTY,**
532 East Washington Street, Indianapolis, Ind.

FOR SALE.—1000 lbs. of well-ripened linden extracted honey, in 55-lb. iron jacket, tin cans, at 7 cts. per lb., and A. I. Root's price of can. Will ship in 40-lb. tin cans, if desired, purchaser paying for cans.
MRS. NELLIE M. OLSEN,
19d Nashotah, Waukesha Co., Wisconsin.

FOR SALE.—8600 lbs. of extracted basswood honey in ¼ bbls.; net weight 185 lbs. I will take 8 cts., barrel thrown in.
JOHN H. MARTIN,
Hartford, N. Y.

FOR SALE.—Extracted clover and basswood honey in ten-gallon kegs at 8c per lb. I will throw in kegs, and deliver on board cars free of charge.
M. ISBELL, Norwich, N. Y.

CONVENTION NOTICE.—The next annual meeting of the Northern Michigan Bee-Keepers' Society will be held at the council rooms in Sheridan, Oct. 22 and 23, 1885. A cordial invitation is extended to all.
F. A. PALMER, Sec.

❖ FOR SALE. ❖

I WILL SELL

Full Swarms of Pure Italian Bees
DURING THIS MONTH FOR
Four Dollars Each.

They are in 10-frame Simplicity hives, and in good winter shape. Ready to ship now. Send money by registered letter. Address

M. R. NICHOLS,
1914th Weaver's Corners, Huron Co., O.

Reduction in Prices of the
PASTEBOARD BOXES
FOR ONE-POUND SECTIONS OF
COMB HONEY.



THIS box has a bit of "red tape" attached to it to carry it by. It makes a safe package for a single section of honey for the consumer to carry, or it can be packed in a trunk, if he wants. It can be opened in an instant. The price of the box is 2 cts. each, set up; in the flat, 15 cts. for 10; package of 25, 30 cts.; \$1.00 per 100; or \$9.00 per 1000; 10,00, \$90. If wanted by mail, add \$1.00 per hundred for postage. Colored lithograph labels for putting on the sides, two kinds, one for each side, \$3.00 per 1000. A package of 25, labeled on both sides, as above, 50 cts. By mail, 30 cts. more. They can be sold, labeled on one side or both sides, of course. We have only one size in stock, for Simplicity sections. Sample by mail, with a label on each side, 5 cts. If you want them shipped in the flat, labels already pasted on, the price will be ten cents per hundred for putting them on.

Your name and address, and the kind of honey, may be printed on these labels, the same as other labels. The charge for so doing will be 30 cts. per per 100; 250, 50 cts.; 500, 75 cts.; 1000, \$1.00.

A. I. ROOT, Medina, Ohio.

HYDROMETERS FOR TESTING HONEY.

We have succeeded in getting a beautiful little instrument, all of glass, that will indicate the density of honey or maple syrup, or any kind of syrup, by simply dropping it into the liquid. I am greatly surprised that we can furnish so beautiful an instrument for so small a sum of money. Price 35c. By mail, 10c extra. Per 10, \$3.00; per 100, \$25.00.
A. I. ROOT, MEDINA, OHIO.

WANTED. After Nov. 1st, position in some Southern State as apiarist. For terms and reference address
CHAS. R. THOMPSON, FORT OMAHA, NEB. 19d

Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they want to dispose of, we will insert notices free of charge, as below. We do this because there is hardly value enough to these queens to pay for buying them up and keeping them in stock, and yet it is often times quite an accommodation to those who can not afford higher priced ones.

Hybrid queens, 50 cts. each; black queens, 25 cts. each; from Aug. 1st to Oct. 1st, safe arrival guaranteed. **G. K. RAUDENBUSH, Reading, Berks Co., Pa.**



Vol. XIII.

OCT. 1, 1885.

No. 19.

TERMS: \$1.00 PER ANNUM, IN ADVANCE.
2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00.
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NOTES FROM THE BANNER APIARY.

NO. 70.

DRONE COMB AND OLD QUEENS.

YOU ask, friend Root, if we did not have some drone comb built, when we allowed the bees to build their own comb in the brood-nest. Haven't you forgotten how this matter was discussed the last time this subject was up—how Bro. Doolittle took it up and enlarged upon it, illustrated, and explained? Before bees swarm they desire drones, and will build drone comb; after they have swarmed they have no desire for drones, and do not build drone comb, *unless* they have an old queen that they are intending to supersede. It is possible that, were the bees allowed a large brood-nest, they would build in it some store comb, but when given only five frames in the brood-nest no drone comb has been built for us, *unless* the queen was an old one. This season, in our apiary, about one comb in twenty-five, built by the bees, is drone comb, and in every case the queen was an old one. Here is a letter upon this subject, that of dispensing with foundation, from our old friend Dr. Whiting:

East Saginaw, Mich., Aug. 31, 1885.

W. Z. HUTCHINSON, Dear Sir:—I have just finished reading your article in Sept. GLEANINGS, and most heartily indorse your plan of getting comb honey from new swarms. My bees put the most honey in the sections when they have to build their own brood-combs. They do next best on foundation, and the poorest on drawn combs. If there is an empty cell to put honey in, the bees will deposit the honey taken with them when they swarm, and there it remains. If they are obliged to build comb, the queen is ready to put in the eggs as soon as the cells are deep enough, and that stops the deposit of

honey below the first eggs that are laid. You will get the most wax in the openings in your queen-excluding honey-boards in a poor season, and with weak swarms more than with strong ones.

L. C. WHITING.

When talking the matter over with Mr. R. L. Taylor, at our State Fair, he said that he had hived two or three swarms upon empty frames, and he could not see but that they did just as well as those given foundation. 8—W. Z. HUTCHINSON, 70—100.

Rogersville, Mich., Sept. 21, 1885.

OUR OWN APIARY.

REPORTED BY ERNEST.

AS there is some inquiry in regard to "Our Own Apiary," and a number of the friends have requested to have this department renewed, I hope our patrons will excuse me if I make an attempt at it. There are some very obvious reasons why it should be recommenced. By virtue of our position we are supposed to have a sort of experimental station, where all the modern appliances are to be thoroughly tested, and a report of the same to be given from time to time. It is true, a report of the more important things have been given occasionally; but I feel assured our A B C scholars would be glad to know just what we are doing in our *own* apiary, that they may execute their own plans accordingly.

CARNIOLAN BEES.

I have just to-day examined that Carniolan swarm. About four-fifths of the bees are now of the new race. It seemed to me, as I looked at whole frames of the bees, that although the difference between them and the common blacks is not very

great, yet there are some decisive marks by which we may distinguish them. In the first place, they are larger than the native bees, and their white or whitish-gray rings of fuzz are quite clearly defined. In fact, they are much like the Italians, with the exception that, where we should expect the golden color, we see a deep jet black; but I do not see any blued-steel color, as some of the friends have claimed for them. As has been said, they seem very gentle, and, in point of disposition, very much like the Italians. While looking at them preparatory to closing the hive, I was forced to think they lacked good grit. You will bear in mind, that there were a few Italians still left in this hive. Well, as I stood over the swarm there were (as is apt to be the case at this time of the year) about six or eight robbers trying to enter the top of the swarm. While the few remaining Italians vigorously repelled every invasion, and stood in readiness for every robber, not one Carniolan did I see show any disposition at defense. In this respect they are like the blacks. I am aware that this is not a test case; but, let others report upon this point.

The Carniolans are said to be handsome. Well, yes; they are handsome with their light gray rings of fuzz; but in my opinion the old standby, Italians, with their golden-yellow bands varied with the same light-gray fuzz, are still handsomer.

THE CLARK SMOKER WITHOUT A VALVE.

One or two of the friends have written that a Clark smoker without a valve worked just as well. It occurred to me that it *might* work, though I feared that soot would collect and fill the blast tube, since the smoke would have to enter the bellows before being blown out. I was not surprised to find that such was the case. Not only did the smoke enter the bellows, but heat and cinders, making the two pieces of board quite hot. Of course, the ultimate result would be that the leather would soon have holes burned through. Where one has only a few hives, and is not obliged to make a "vigorous snudge," a smoker of this kind might answer tolerably well for a while.

THAT BEE DISEASE WHICH HAS NO NAME.

Several days ago our apiarist called my attention to a swarm of bees that were diseased, and which the healthy bees were carrying out. These bees were tugged out, one after another, and left to die, like drones in a dearth of honey. They manifested that peculiar twitching motion; their abdomens were black and shiny, and considerably swollen from accumulated matter. They seemed very much like bees affected with dysentery. We came to the conclusion from the symptoms that it was the disease without a name, mentioned in the A B C book, page 69. On showing it to "A. I." he pronounced it the veritable disease. It is the first case that we have had since the one mentioned in the A B C, although reports seem to indicate that in some localities it is quite prevalent, especially in the last two seasons. Perhaps I should mention that the mother of these bees was not a queen of our own raising, but one from the South. She was sold Aug. 28th, and in consequence the swarm is on the road to recovery. If any of the friends received a queen from us about this time, whose bees show the symptoms mentioned above, we will make her good upon being notified.

THE BEE-TENT WITH A HOLE IN THE TOP.

A few days ago we had a slight touch of robbing, occasioned by a chaff-hive cover which was not perfectly bee-tight (it's fixed now). Well, that tent

with the hole in the top was placed over the hive, as mentioned on page 540. The result was almost astonishing. As each bee had bumped his head against the top several times, and had popped out of said hole, he seemingly went home in disgust; and, as far as we could discover, stayed there. It would seem that we ought to manufacture these tents with this opening; but I am afraid some friend, not knowing what the hole was for, would complain, saying his tent was "holy," so we will send them out as before, and the purchaser can make the hole himself. The opening in our tent is about 4 inches in diameter, right in the peak.

PREPARING FOR WINTER.

Our apiarist, for a week or so back, has been getting the bees ready for winter. All superfluous combs partly filled with honey are placed over the brood-nest. The object of this is to secure nothing but full combs of sealed stores for the bees. After the combs are emptied they are removed, and kept till next winter. Caution has to be exercised here, or the robbers, smelling the honey in the upper story, will get at the combs unless the covers are absolutely bee-tight. Doubling up has already commenced, and every colony is examined to see that it shall have sufficient stores. If the queen does not lay she is given an empty frame in the center of the brood-nest, and the colony is fed. This is to secure young bees for winter.

ERNEST R. ROOT.

DOOLITTLE'S REPORT.

DO BEES GET HONEY FROM THE MAPLE, OR IS IT ONLY POLLEN?

WHEN I took an inventory of my bees on May 20, 1885, I found that I had, after sales and losses, 25 good to fair, 15 rather weak, and 10 very weak colonies, making 50 in all, left out of 80 in the fall of 1884. Still having further calls for bees, and having much extra work on hand, I again reduced my stock by sales, disposing of five of the best and five of the rather light ones, which left me but 40 to commence the season with, ten of which were so weak on June 1st that they had brood in only one and two combs. These ten weak colonies, and three of those next weakest, were set apart for queen-rearing, thus leaving but 27 to be devoted to the production of honey. The spring was quite unfavorable until the willows and hard maple blossomed, at which time we had some pleasant weather, which was improved by the bees in gathering pollen from the maple, and honey from the willow. This gave all the good colonies a nice start, but the weaker ones only held their own till after the 10th of June, at which time we again had warm weather, and all began to be prosperous.

Why I speak of pollen from the maple, and honey from the willow, as above, is that many seem to suppose that hard maple yields much honey certain years, while all of my observations show that it yields comparatively nothing but pollen. I do not say that such is the case in all localities, but I am inclined to think that it may be. We are all apt to jump at conclusions, so when we hear the merry hum of the bees in the maple-trees, and see at the same time that honey is being stored in the hive, there is nothing more natural than to suppose that the honey came from that source. But, to be sure such is the case, we need a little more proof, which, in my case, after being applied gave the credit to

the willow for the honey, and not to the maple. If any person has maple, with no willow within five miles of him, the conclusion that the honey came from maple would be better founded than when there was an abundance of both, and still the conclusion might be wrong, as the proof by killing a bee might show. When I desire to know just what a bee is getting from any plant or tree, I watch it for some length of time till it has visited a number of flowers, when I catch and kill it, after which I remove its honey-sack, which tells me at once if said bee is getting honey from the flower it is at work upon; for if the sack is empty it says no honey. Thus I find the honey-sack of bees at work on hard-maple blossoms empty, while their pollen-baskets are filled with pollen; a bee thus caught on the golden willow shows a sack full of honey, with no pollen in its baskets. Is not this better proof than the first supposition cited? These facts are of value when we are deciding what to plant for honey. But, to return to the report.

Bees got scarcely a living from raspberry; but, thanks to our farmers, a few acres of alsike clover had been sown the season previous, which, together with the little white clover along the roadside, gave the bees a plenty for brood-rearing, while some of the strongest stored a little in the sections from the same. However, but very few sections were completed—the main benefit being in helping in brood-rearing and giving a start in some of the sections, which was continued during the basswood flow.

Basswood opened July 14th, but the bees got very little from it until the 18th, at which time work began in earnest, and lasted for 12 days, which, with two days of winding up, ended the honey season for 1885; for since this the bees have got nothing except a little for brood-rearing during a few warm days about the 10th of August.

After having my honey all crated and weighed, I find the result of the season to be as follows: Comb honey, 252 lbs.; extracted, 188 lbs., or 3160 pounds in all. This divided by 27, the number of colonies worked for honey, gives an average of 117 lbs. per colony, nearly all of which was comb honey. I have at date, 90 colonies and 30 nuclei, but I shall double down to less than 100 for winter. I am selling a little honey about home at 15 cts. for comb and 10 cts. for extracted, but I presume I shall send the most of it to be sold on commission, as those talking about buying offer very low prices. F. I. Sage & Son, of Weathersfield, Conn., have bought several crops in this (Onondaga) and Cortland Counties, at from 11 to 13 cents per lb., but I am hardly willing to sell at those figures. One thing recommends their plan of buying to bee-keepers, however, which is that they come to your railroad station, accept and weigh the honey there, and pay "spot" cash for it. Thus the bee-keeper is relieved of all worry and bother which naturally arises where honey is shipped on commission, or paid for on delivery in any of the large cities.

Borodino, N. Y., Sept. 16, 1885. G. M. DOOLITTLE.

Friend D., the point you make is a good one, that we are not sure that bees get honey from any plant or tree, simply because we see them busily at work on it, and honey is coming into the hives. It still seems to me, however, that bees do get much honey from the maples here, although I have no better reason to give than that maple-trees

are roaring with bees, while an abundance of honey is coming in, having a strong flavor of maple syrup. There are very few willows in our vicinity, and I have never noticed bees on them, what there are, unless it be an occasional willow, such as we sometimes find in dooryards, as an ornamental plant. However, I am going to test the matter, in the way you suggest, when I see bees working on the maples again.—I am glad to know that there are large honey-buyers who make a practice of going right to the producers, and shipping it at their own expense.

RIPE EXTRACTED HONEY.

HEDDON'S PLAN TO GET IT.

As promised, I will now endeavor to outline the plan by which I produce such honey as brings a favorable testimonial from about 2, of my customers (most of whom are bee-keepers, and good judges of honey), and complaints from none; such honey as I have just shipped you.

Before beginning a description of my plain simple method of working, let me first call your attention to the fact, that although our basswood honey stands first in brightness of color, and second to none in the comb, it is beginning to be graded as second to white clover, when extracted, by some of our dealers and consumers. The query naturally arises, "Why this difference in grading, between these two kinds of honey in the comb, and extracted?" I believe the reason to be based upon the fact, that many of us have extracted our honey before it was *dead ripe*; and where this system is practiced, basswood honey is apt to be taken out in the least ripe condition, for the reason that clover honey is usually riper in the flowers, and comes in slower, allowing the bees to evaporate it more, before the apiarist thinks he sees the necessity for emptying his combs.

I suppose nearly all readers know what is meant by "ripe" honey. We call honey "ripe" when it has that smooth, oily, and thick consistency of old comb honey that has been in the hive some considerable time. It is then free from that sharp "twang," or cutting sensation in the throat, which nearly all consumers dislike. This undoubtedly is caused by a slight development of bacteria, which are always present, we are told, in cases of fermentation. It may properly be said, that this raw, "twangy" honey, is more or less infested with these germs, or tending toward fermentation, or souring. The interior of the hive, together with the system of digesting, heating, and ventilating, by the bees, seems to be the best place yet known in which to destroy these germs, leaving the honey thick, rich, oily, or smooth; in other words, *ripe*.

I will tell you how we have worked to produce our honey, which we consider thoroughly ripe.

Our last winter's loss of about 350 colonies left us with a large number of combs to cover with bees. We had on hand and nailed up, about 600 supers the full size of our 8 L. frame hive. When our hives were well filled with brood, and the surplus season opened, we put on our honey-board, and one of these supers containing eight brood-combs. As soon as these eight combs were pretty well filled, and the bees commenced capping them at the top,

this super was raised up, and another empty one, just like it, placed under it, upon the tiering-up plan—the grandest principle connected with the production of comb or extracted honey.

Experienced bee-keepers will at once suspect the fact that the lifting of this super, and introduction of an empty one under it, considerably checked the capping of the honey it contained, while it did not materially retard the evaporation or ripening process. During the beginning of the clover and basswood bloom, at that time when the nectar is thinnest, we frequently used three of these large supers on a hive, for a short time, before we removed the upper one and extracted it. When we came to extract we found our honey thoroughly ripened; yet the combs containing it, capped over only where they were thickest, and you will remember that it is very speedy and pleasant work to uncapp combs that are capped over only where the cells are most elongated, leaving you no hollow places to reach into with the uncapping-knife.

After our honey is extracted we leave it in large tanks till it is thoroughly settled; *i. e.*, all air-bubbles, bits of comb, etc., have risen to the top, when we draw it off at the bottom into our 50 and 100 lb. kegs; bung them up tightly and put them in a cool place. This thoroughly ripened honey will not candy or granulate nearly as quickly as that which is unripe, or of less body, containing, as it does, more water. We also store a considerable quantity in 50-lb. tin cans, and also about 500 one-gallon stone crocks, which we keep till cool weather, when all honey begins to granulate; and when our customers ask for "clear honey" we set these crocks and cans in our large tank containing water, and placed upon the stove, and slowly and carefully heat it till it is again all liquefied, when we pour it into one of the tanks, give it time to settle, and while yet warm enough to flow readily, draw it into the kegs and bung it tightly, when it is ready to ship. This heating process, properly done, rather than being an injury to either color or flavor, is an additional help to perfecting the quality of honey.

It has recently been discovered, I see by GLEANINGS, that some peculiar varieties of honey that are almost poisonous when unripe, are quite the reverse when thoroughly ripened. I feel quite sure that all honey is much more wholesome when completely ripened; and it is only such honey that creates an increasing demand.

Father Langstroth tells us that basswood honey contains most of the nutritious oils which make it pre-eminently adapted to persons of weak lungs or consumptive tendencies. He tells us how Mrs. L. was saved from premature death by consumption, by way of a systematized basswood honey diet. He has just ordered a 100-lb. keg from us.

I claim nothing original or new in the above, except, perhaps, a trifle by way of detail and manipulation. I gave it to more thoroughly impress upon the minds of our bee-keepers the importance of the system which is so ably formulated in friend Dant's little pamphlet on the subject. In ordinary cases I should, like friend D., use shallower supers. Last spring I had but 120 colonies left; but I had faith. I paid out \$7.00 for 124 more colonies, in all sorts of nearly worthless hives. By modern transferring they are now in our eight-frame L. hives, numbering 450, and though the unprecedentedly cold weather utterly destroyed our August crop, we got at least ten tons from clover and basswood;

and now the returning warmth is filling up our brood-chambers with goldenrod and aster honey. Thus our faith and pluck have been rewarded.

Dowagiac, Mich.

JAMES HEDDON.

Friend H., I entirely agree with what you say about ripe honey, although there are some of the friends, and, if I mistake not, Prof. Cook among the number, who claim that basswood honey is fit for the market if extracted before being sealed up at all, without the ripening process. Another advantage of your plan of getting the honey thoroughly ripened is, that you can secure pretty nearly if not quite the entire crop before you go at the extracting business at all. Of course, you may have to do your extracting at a time when honey has ceased to be gathered, and at such a time you will have to take very great precautions against robbers; but for all that, I think it is the better way. The nicest and best-ripened honey that I remember to have ever tasted was left on the hives until so late in the fall we were obliged to remove the combs from the hives by moonlight, to avoid disturbance from the robbers. We managed it easily, taking combs out and putting them back almost without a bee taking wing. The honey would hardly be recognized as basswood honey, the flavor was so ripe and complete, if that is the proper word.

A CAVE FOR WINTERING BEES; HOW TO MAKE ONE.

IS IT ADVISABLE TO TRY TO CONSTRUCT CAVES WHERE THEY ARE NOT TO BE FOUND NATURALLY?

SEVERAL have recommended a cave to winter bees in. Will not you or some one who has built one tell us just how it is done, telling especially how the roof is made? Our bees are storing honey very fast now from fall flowers.

Muscatine, Ia., Sept. 21, 1885.

J. T. GODDARD.

Friend G., I gave a very full description of how to build a cave, in the December No. of GLEANINGS for 1871—just eleven years ago, you see. Since that time a good many have used such caves, and some prefer them—among them, if I am not mistaken, Mr. L. C. Root, author of "Quinby's New Bee-Keeping." These caves are mostly used, however, where long cold winters are the rule. In our variable climate we have mostly discarded them. A cave for wintering can be built easiest in a side hill, for then there is no trouble about drainage. The room for the bees should be covered with a sufficient quantity of dirt to prevent frost from getting through; and over this dirt I would have a shingle roof. If you don't, heavy storms will be quite apt to get through and make it wet inside. A shingle roof will keep the dirt dry, which makes it a better non-conductor of frost. You will have to have a pretty strong framework to support this body of dirt; and another trouble comes in here, for when this framework begins to decay there is danger of your cave coming down on the bees, and possibly on yourself. Arching it over with brick or stone would do, but this would be much more expensive than having a building overhead—or, in other words, using an ordi-

nary cellar. If you are in a locality where a cave can be cut in a tolerably soft rock, you are, of course, all right; and in some cases I presume natural caves would answer an excellent purpose.

BEES BY THE POUND, FROM LOUISIANA TO NEW YORK.

HOW IT TURNED OUT.

IN the fall of 1884 I had a genuine Florida fever. The fever was induced by a young gentleman who was spending a few months' vacation at a summer resort a few miles from me, and who spends a greater portion of the year in Florida attending his orange-groves. This gentleman became interested in my apiary, and caught the bee fever, and offered me a very good salary to spend a few months with him, and set him up in the bee-business by establishing an apiary in his Florida home; but circumstances compelled me to stay in my Northern home. It was my plan, had I been at liberty to accept his offer, to take some of my best Italian bees south and rear queens and bees, and ship north by the pound early in the spring.

Having an apiary of over 50 swarms in an adjoining town, and losing quite a number of colonies during the winter, I thought it a good chance to try my Florida scheme. But instead of myself sitting under the orange-trees and receiving money from the north for bees, the experiment was against myself. Another man under the orange-trees must ship me the bees to stock up my apiary.

In March I commenced correspondence with parties in Florida; but our orange-grove bee-men did not have bees to sell by the pound, so I turned my affections and attentions to the man on the sugar plantations of Louisiana, and found a man who was willing to send bees by the pound. My trade was for 100 lbs. of bees and a number of queens, to be delivered the first week in May; but owing to cold weather in the South I did not receive my first shipment until the 25th of May; 30 lbs. were sent in this lot, put up in 2-lb. packages, and upon arrival I found fully one-half of the bees dead. In two cages every bee was dead; in several others, from one-half to two-thirds were dead, and only in two or three cages were the bees in good condition. In one cage there were less than a dozen dead bees.

This first shipment had quite an effect upon my Florida fever. It did not run so high. I wrote my shipper the condition of the bees upon arrival. The cages were 5½×5½, and 13½ inches in length. The candy was placed in two sections, flat in the bottom of the cages. Just as soon as a bee died it fell into the candy and stuck there; and as soon as enough died to cover the candy, the rest had to "root, hog, or die;" and as they didn't know how to "root," they died.

The next lot of 30 lbs. was put up in 5 lb. lots, in 4-frame-nuclei boxes, with combs for them to cluster and feel at home upon. I was assured that bees so shipped had been put through long distances, and had arrived in fine condition. My Florida fever began to rage again, and orange-groves appeared in my night visions.

On the 9th of June this lot arrived, and my Florida fever received such a shock that it has not returned since. The bees were in a worse condition than the first lot, and showed signs of very rough handling.

The candy was in the bottom, like the first lot; and in the cages where the bees were all dead, but a small portion had been eaten; and though the combs were wired L. frames, they were melted down; and comb, bees, and candy, were in a filthy, sticky mass in the bottom. Honey was oozing out from all sides of the cage. Smothering was very evidently the cause of death, and there were but a few pounds of live bees left in the whole lot. The queens to go with these pounds were sent by mail, and nearly all of these arrived in good condition.

The nuclei formed from these weary, dismayed, forlorn surviving travelers brightened up in a few days, and those that arrived upon the 25th of May were put to their level best; and when our bountiful harvest from basswood came they stored a paying amount of honey; and it is safe to say, had my 100 lbs. come to hand by the middle of May in the two-pound lots agreed upon, and in good condition, they would have given me fully 5000 lbs. of basswood honey. Of course, I could not ask the shipper to pay for this prospective honey. He sent me several extra queens, and promises to pay all express charges on all that are dead upon any lots I may order in the future. Our trade was amicably settled, but I do not feel like hearing the subject of experiments, especially unsuccessful ones. My actual damages would read something like this:

Loss of 5000 lbs. of honey @ 8c.	\$ 400
Going to R. R. station 6 miles, several journeys.	20
Distress of mind at not finding bees there.	1000
Destruction of my Florida scheme.	5000

Total, - \$6420

Now, the most of people would go nearly crazy over such a loss as this; but I have learned to take things cool, and to be happy under all circumstances. I have a good yield of honey, and will make all I can out of it. J. H. MARTIN.

Later.—My Florida friend of last season is here again. I have just had a pleasant visit with him. He started with 10 swarms, increased to 38, and obtained 300 lbs. of extracted honey; sold for 25 cents per lb. By transferring out of season he got his bees to robbing, got stung, and got everybody else stung around him. My Florida fever begins to afflict me just a little—somewhat intermittent.

Hartford, N. Y., Sept. 25, 1885.

J. H. M.

Right glad we are to hear the report, even if it is a failure, friend M. Now, had you consulted your A B C book you would have noticed that I emphatically insist that bees shall have ventilation through both top and bottom of the package, where they are to be sent long distances. I have experimented in this matter to my heart's content, and I thought I made it so plain in the A B C book that no one, after reading my directions for moving bees, would have made such a mistake. I can take a powerful colony in the hottest day in July, and by covering both top and bottom of the hive with wire cloth, so that the bees can send a stream of air right through, they can be shipped safely almost anywhere. The perspiration and hot air rise right through the upper wire cloth, providing a stream of cold air can come right in from the bottom. Long ago we also gave warning that the food, whether candy, honey, or whatever it may be, should by no means be on the bottom, for dead bees to fall into; besides, the bottom is all wanted for ventilation, as I just told you. I

do not think there is a better plan for fixing the candy in the cage than the one we illustrate and describe in the A B C book, and this cage has gone longer distances than from here to Florida, with perfect safety. There are, however, losses in shipping bees occasionally, which we have never yet been able to understand; but I should say that nine-tenths of your bees ought to have gone through in good order. Now, friend M., do not make out any more bills of \$6000 and over, for loss of "castles" built entirely in the air; but let you and your friend go to work next season testing a pound or two at a time, until you are all right. In fact, you ought to do that in any business. Send three pounds first; if they go all right, then try ten pounds; next twenty-five. If all these go safely, you are ready to try fifty or perhaps a hundred, if you choose.—To be sure, the orange-men in Florida, and sugarmen too, for that matter, ought to help us, and we ought to help them too. In the same way, we ought to help the express companies, and they ought to help us, and will, if we go about it in the right spirit. We are a band of brothers all round, and can surely work together. Don't you remember who it was that said, away back, years ago, "We be brethren"?

OBSERVATIONS UPON DRONES.

BY L. L. LANGSTROTH.

BEVAN says that the drone hatches on the 24th or 25th day after the egg is laid. I know of nothing more definite on this point.

To get more precisely the facts, on the 16th day of last July, a drone-comb was put, at 5 A. M. centrally in a strong colony, which had been fed for several days, as the drones were being expelled from many hives. At 9 A. M. the queen was found on that comb, having laid three eggs. She had just begun laying. At 9 A. M., on July 17, it was removed to a strong colony, without queen, eggs, or larvæ. On July 27, many cells were capped, and on July 23, at 2 P. M., some 200 were capped, many eggs having, for some cause, disappeared. On Aug. 9, none had hatched. On Aug. 10, examinations were made every hour. At 5:30 P. M. none had crawled out; at 6:30 two had hatched, and a third was hatching. If these drones came from the first eggs laid, they took about 25 days and 8½ hours to develop.

At 6 A. M., on Aug. 11, many more had hatched, and at 6 A. M., on Aug. 12, all but 17 had hatched. At 6:30 P. M. all but two had hatched, and at 6:30 A. M. of Aug. 13, the last one was found with the cap off, trying to crawl out; it was strong and perfect. Now, if the egg producing this drone was laid just before the comb was removed, then it took nearly 25 days to mature.

During the whole time of these observations, the weather was of the most favorable kind—the thermometer ranging nearly every day above 80° Fahr., and being only once as low as 62°. The colony was kept in good heart by daily feeding, and I can think of nothing which could have retarded in the least the development of these drones, unless possibly the fact that from so many of the eggs having disappeared they were not as compact in the comb as they otherwise would have been. In this observa-

tion, although there could not possibly have been more than 24 hours' difference between the laying of the first and the last egg, there was about two days and a half between the hatching of the first and the last drone.

It is quite interesting to watch the different actions of just hatched workers and drones. The worker, true to her name and office, begins to crawl over the combs as if to feel her legs, stops occasionally to clean herself up, and before long helps herself to honey from an open cell. The drone, on the contrary, is a born dependent. The first act is to touch the nearest worker he can reach with his flexible antennæ, and, begging to be fed, he is at once supplied with honey disgorged from the proboscis of his attentive nurse. And so he goes on all his life, seeming to prefer to be fed, although perfectly able, if needs be, to help himself.

A very bad name has always been given the drone. Virgil has his fling at him, stigmatizing him as having no proper office in the economy of the hive—seeking only to devour the stores which he had no share in collecting. I wonder what the poet thought he was made for! or as he says that the bees collected their young from the flowers, being too chaste to breed them, what motive he could have thought they had to gather in such useless consumers! And yet without any special pleading, how much can be said in his defense! It is only too evident that his proboscis is too short to suck honey from the flowers; that his legs have no pollen-baskets; and that he can secrete no wax. Great as his bulk is, he has no sting, and can do nothing for the defense of the commonwealth; but then, without him that commonwealth could have no existence. The sole object of his life seems to be, at the proper time, to fertilize the young queen—and this he is always ready to do. Now, why should we blame any creature which fulfills the special object of its creation? And yet I fear me, in spite of all that can so justly be said in his favor, our poor drone will always be cited as an incorrigibly idle reprobate, who meets with only his just deserts when, after a life of pleasure, he is killed without mercy by the industrious workers. He will always be known as Shakespeare's "lazy, yawning drone."

Oxford, O.

REV. L. L. LANGSTROTH.

CONVENTION NOTICES.

The Central Illinois Bee-Keepers' Association meets at Jacksonville, the last Wednesday and Thursday in October. CHAS. DADANT.

The Central Michigan Bee-Keepers' Association will meet in the Pioneers' Room, in the State Capitol, at Lansing, Mich., at 9 A. M., Nov. 12, 1885. Every one who has bees, or is interested in bee culture, is invited to attend. E. N. WOOD, Sec.

The Progressive Bee-keepers' Association of Western Illinois will meet in Macomb, Ill., on Thursday, Oct. 15, 1885. Let everybody come and have a good time. Good speakers are expected.

J. G. NORTON, Sec.

The Wabash County Bee-Keepers' Convention will meet in G. A. R. Hall, North Manchester, Ind., Oct. 10, 1885. All bee-keepers are earnestly requested to be present. J. J. MARTIN, Sec.

The Western Bee-Keepers' Association will hold its fourth annual meeting in Independence, Mo., Thursday and Friday, Oct. 15 and 16, 1885. The association will endeavor to make this the most interesting meeting yet held, and will spare no pains within its means to make it in every sense valuable to all. Several of our most prominent bee-keepers have signified their intention to be present.

C. M. CRANDALL.

REPORT FROM W. S. HART.

ANOTHER VERY FAIR REPORT, AT LEAST, FROM
FLORIDA.

EDITOR GLEANINGS:—According to custom I will now make a report of the season's work in my apiary, up to date. Last season closed with 117 colonies; started this season with the same, all in good condition; increased to 148, and have taken, as nearly as I can tell at present, 11,900 lbs. of honey, of which 250 was comb in pound sections, and the rest extracted. This, as you will see, gives me about 100 lbs. to the colony, spring count, which is about thirty pounds below any previous average made since I took charge of my bees, eight years ago; and although a small report, still I believe it is a "paying" one.

The season proved an anomaly. Almost every thing in the way of bloom has been from two to six weeks later than usual; and when it did come it was quickly over. Saw-palmetto produced almost no honey, and gallberry very little. The bright amber honey of May and the first half of June, that usually constitutes our first surplus for shipping, was entirely wanting this season. What early honey we did get is considerably darker, and has a stronger flavor than usual. Mangrove honey came in very late, and, like the cabbage-palmetto, which yielded freely, was in bloom but a short time. The mangrove, however, was blooming freely some days before the bees fairly went to work upon it. Why this was so is a mystery to me.

The mangrove and cabbage-palmetto honey is of as fine a quality as need be. I believe it is better than ever before, and partly, perhaps, on account of my new method of curing it in a sun-evaporator under glass instead of as formerly in large tanks, which were run out into the sunlight when full. I may speak more particularly of my new honey-house and fixtures at another time.

The honey crop for the State will, so far as I can learn, run short of an average one in about the same proportion as my own, or, say, one-half a crop; but that fact seems not to have discouraged any of our apiarists, so you may look out for a big crop from our State next year.

A larger proportion of comb honey is being raised than formerly; and surely, if it can be placed in the market without breakage, it will bring the "top price." Now for a few words on various subjects.

WAX-EXTRACTORS.

I have now had in use for the past two years the sun-extractor described by Mr. O. O. Poppleton in back numbers of GLEANINGS, and so far I have seen or read of no better plan for rendering wax. Its good points are, 1st, Its cost is very little; 2d, Almost any one can make one who has a frame of sash; 3d, It cleans the wax perfectly, and brings it out bright, clean, and handsome, the first time melting, and no mussing about it; 4th, By having two pans for it, one can always be at hand ready for all odd scraps, while the other is in the extractor.

Well, perhaps I had better not tell the rest now, but will just say, *try one*.

YELLOW JESSAMINE.

This grows plentifully throughout our hummock and scrub lands, and considerable of our winter honey comes from it. Both myself and many of my neighbors have eaten freely of it, both after it had been capped over and also before, when it had just been gathered, and I have never known any ill

effects, nor have I ever found that it injured my bees in any way; yet Dr. J. P. H. Brown tells me that in Georgia they lose a great many young bees by it. Evidently, locality makes a great difference, or else there is some other plant that causes the trouble. The honey is never taken from the hives to be shipped, as all of it is needed for brood-raising.

CLIPPING QUEENS' WINGS.

Let me say, that I vote for clipping the queen's wings *every time*. I have done it for years, and Mr. Mitchell, who has had full charge of my apiary for the past two years, does the same. It would take considerable money to hire us to give up the practice. It certainly has been of great profit to me, and I think the loss of one queen is all there is to be charged to the practice in all this time. Some of my neighbors who do not practice it are losing more or less swarms that go to the woods every year, while we have not lost a colony from any cause for about three years. I think this last fact may be a good argument also to support a number of statements and claims that I have made in past writings. It also speaks well for Harrie's management. No artificial swarming for us, if we are working for extracted honey.

I make it my business, and I consider it the business of every officer of any bee-keepers' society to watch over the newspapers of their respective States; and if any thing is published that is damaging to our industry in any way, at once reply to it; or, if it is false, correct it by an article showing its fallacy. Editors are sometimes misled, but seldom or never publish any thing of the kind with a deliberate intention of injuring any honest industry, and, I believe, are always glad to receive and publish such matter as is sent to them by any well-known and respected bee-keeper. Such a letter may be made not only to counteract the influence of the libelous article, but may give a few hints and facts that will help create a "hankering" for some of that genuine "bees' honey." Of course, I would have all bee-papers ready to refute any misstatements in the future as in the past; but bee-papers go mostly to bee men, who know honey when they examine it, while the newspapers carry the correction right where the other article went, and it thereby reaches the parties most likely to be influenced.

Hawks Park, Fla., Aug. 31, 1885. W. S. HART.

APIS DORSATA.

A FEW MORE BRIEF WORDS FROM FRIEND BUNKER.

FRRIEND ROOT:—In reply to questions in GLEANINGS of May 15th I will say, the comb for brood is not cylindrical, but flat. On the right of this comb, however, and attached to it—yes, forming a part of the brood-comb—is this cylindrical comb. Though built on the same limb as the brood-comb, yet the store-cells are so elongated in the middle portions of the comb as to give the general form of the comb a spherical shape. Perhaps this is the better term to use in describing the honey-comb of this bee.

I could discover no drones or drone-cells in the stock I captured. The brood-cells were all the same shape and size—at least so far as I could discover. The store-cells, however, varied much in depth, according to measurements given. No brood is ever raised in the store-cells. These are exclusively for honey, and so I have called them the honey-comb

in my description. The question of drones and queens must yet be answered. In the *Apis florea*, the queen and drones are much larger than the worker-bee, comparatively, than is the case in the *A. indica*. The drones are of a beautiful slate color. I am inclined to think that this bee has more than one queen to each stock, but am not at all certain. As I remarked in a former letter, the *Apis florea* resembles the *A. dorsata* in many ways.

A. BUNKER.

Toungoo, British Burmah, July 3, 1885.

Many thanks, friend Bunker, for the additional information you give us. It seems to be a little hard for us to get hold of the idea of these cylindrical honey-combs. Could you not make some kind of a drawing of it when you are writing?

In addition to the above facts, friend Bunker sends the following in a private letter; and this private letter is of so much interest to all who are interested in *Apis dorsata*, that I am sure friend Bunker will excuse us for making at least a part of it public. It is as follows:

You have very kindly offered to help bear the outlay in experimenting with *A. dorsata*. I should not hesitate to accept your kind offer, if I were sure I could get any good for you and the public out of the experiments; for the fact is, we missionaries, with our divided families, part here and part in America, find it hard to make the ends meet. We can not use our allowance for support to the best advantage. No complaint, however, you understand.

Doubtless if I had ample funds I could drive the experiments with *A. dorsata* much faster. I have to hire men to climb the trees and transport the bees 23 miles, and carpenters to make the hives, which is expensive. The last hive cost me 12 rupees (a rupee, or, rather, 25 rupees, equal \$1.00). I paid 8 rupees for men to climb for the bees and bring them into town. Of course, I now have the hive and I shall not be obliged to get another very soon.

By the way, every hive must be thoroughly protected from ants, by surrounding the base with water or oil. I am exceedingly interested in these bee experiments, and am leaving nothing undone by which to post myself on all the ways of bees, and I shall do my best to give *A. dorsata* a fair test.

In closing, my dear brother, allow me to bid you "God speed in your good work." You have been liberal to this missionary, for which you are held in grateful remembrance.

I hope to send to you soon an order for tin pails for honey. My helper in the study of bees, a very intelligent Karen, wants to try an experiment in marketing the 40 bbls. of honey from the *A. dorsata* of his village. He thinks that if the pails are ant proof he can put up the honey with a neat label, and ship to the Rangoon market, now the railroad is open, and make a good profit. I mention this as a fact of progress; so, look out for an order, say when the season slackens with you, as I suspect then will be best time to buy.

A. BUNKER.

Friend B., I believe the best way of expressing my hearty sympathy with your enterprise for putting the *Apis dorsata* honey up in tin pails for market would be to tell you that I have placed to your credit \$25.00, to be used for tin pails, or in any other way you may suggest. If, as you suggest, it should not amount to any thing, I will risk

so much in the experiment. I know how it is with missionaries, and I have always had reason to believe that they as a rule make pretty careful investments.

CLIPPED QUEENS.

FOR AND AGAINST.

IN reply to your questions on page 455, arising from comments on Mr. Doolittle's article on clipping queens, I will say, from my observation and experience, that it takes a natural swarm but a very few minutes to ascertain whether or not the queen is with them in the air, and every thing in order for further proceeding. If the queen be not clipped, swarms will issue quickly, and at once cluster; while with a clipped queen they are longer leaving the hive, and so much time is usually spent before clustering (which they often do, and sometimes do not), that many bees return to the old stand. Even if the queen be found and caged immediately, and hung upon something where a few show disposition to cluster, as Mr. Doolittle mentions, as a rule it does not warrant their clustering there. To suspend the cage among the bees in the air by means of a long stick, and "fly" it around with them often induces them to cluster quickly; but even this is not usually satisfactory. If they do not happen to fly all over your yard and your neighbor's yard too, as swarms with clipped queens often do, they do take up a good deal of time. This may not matter, if one has a few colonies; but when a dozen swarms are likely to come out within an hour, some quicker method of disposing of them works better for me. I have occasionally had half a dozen swarms issue, one after the other, with an average difference of not more than three minutes, with queens having good sound wings, and I alone find no difficulty in getting each swarm hived by itself with its own queen, as it should be. Imagine the "muss" I should have had, if those queens had been clipped. Some would say the bees would return to their respective hives. This they *might* do, but more than likely some one or two out of half a dozen would get the most of them. I believe more clipped queens are lost at swarming than are swarms by absconding. If they are not lost outright, they are quite often balled or superseded shortly after.

Now, doesn't it depend upon the comparative value of queens and bees, together with one's ability to manage successfully at all times, whether or not we can advise clipping? As for me, in my home apiary, managed expressly for comb honey, I allow a certain amount of swarming, and prefer the queens *not clipped*; while if I were running an apiary away from home, equally strong, for comb honey, and not in charge of an excellent hand, I would allow no natural swarming, and have all queens *clipped*.

C. W. KING.

Kibbies, Mich.

Friend K., I have had queens with clipped wings act just about as you describe, a good many times, and that is one reason why I have several times before made the statement that it seemed to us we had more bother where the queens were clipped than where they were unclipped. I agree with you, that it is quite likely circumstances may greatly alter cases in such matters.

SOMETHING ABOUT BEES AND BEEHIVES.

SOME INTERESTING FACTS AND REMINISCENCES
FROM ONE OF OUR VETERAN READERS.

ALTHOUGH not recognized among the more successful bee culturists of the country, save and except father Langstroth, I am, perhaps, the oldest. I have been caring for and handling bees for at least fifty-two years. Before I was out of my 'teens I had invented various "contraptions" for the more ready and careful handling of bees, none of which are now worthy of mention. I knew very little, however, of what others had been doing with and for the "little busy bee." I had read no books on the subject—knew of none—and had only my own and my father's experience as my guide. It is strange that it should be so; but it so happens in this world that one man's experience amounts to very little. Evolution (development) is indeed the order of creation. I knew what a drone was, and *his* uses. I knew what a queen was, and the part *she* played in the economy of the bee-hive. Then, however, she was commonly known as the "king-bee." But I now wonder that any one could have been so ignorant, and yet be a comparatively successful bee culturist. About this time a little A B C book on the honey-bee, fell into my hands, which was indeed a revelation to me. I arose from the perusal of this little volume, the title of which I have forgotten, delighted with what I had learned, but amazed that such knowledge should have been kept from me so long. This book confirmed all I had ever learned, and told me of wonders far beyond any thing I had ever imagined as true of the honey-bee. And it was just at this point that father Langstroth came upon the scene, and told us of the wonders he and others had discovered in this line. He came with book and hive, and said: "I am going to tell you of mysteries more wonderful than any tale ever told by Arabian Nights; I am going to tell you of the mysteries of the honey-bee." To say that I read his book with profit, is tame and flat; I read it with the greatest pleasure, delighted with the knowledge it afforded, and thankful that my eyes had been opened to the truth as it is. I at once adopted the Langstroth hive, and for more than twelve years I used no other. I followed it through all its different forms, and imitated it in all its different styles. However, after the war, having got rid of all my old bees and hives, by a change of location from the Valley of Virginia to tidewater near Richmond, I began to tinker with other styles and make of hives; and the consequence is, I have now in use about 17 different make of hives—just 16 more than I ought to have. I have the four different styles of the late M. Quinby. I have the Simplicity, the Gallup, the Triumph (in two different patterns) the American (in two different styles), the Maddox (in two different forms), and three other hives, the paternity of which is in obscurity. One of these has 10 combs 20×17 inches. One has 12 combs, 12×14 in., and one 10 combs, 11×13 inches. In addition, I have three kinds of my own get-up. So you will see I have had quite an experience with hives. Pope said the best government was the one best administered. I might say the same of bee-hives—the best one is the one that is best handled; and yet there is a difference, under the same treatment, worthy of consideration. Of course, I think

mine better than any other. I aimed to have it free from the objectionable features I had discovered in nearly all the others I have named. Without intending it, the inside measurements of my hive are nearly precisely those of the Langstroth hive. But I run my frames—13 in number—crosswise to the opening. There is no special advantage in this, except in the facility of handling them. I work entirely from the rear of the hive, and the bees in front scarcely know what is going on till the honey is all extracted.

I begin the honey season by placing all the brood-combs in front, and the hive is frequently overflowing with bees before any brood is found beyond the seventh comb, and the six rear combs will have in them nearly all the honey that is in the hive. This is a consideration in extracting, if in nothing else. I am not bragging on my hive. I have no special vanity that way, but only write to say what I do and why I do it. G. K. GILMER.

Marion Hill, Va., Sept. 9, 1885.

REFINING HONEY WITH ANIMAL CHARCOAL.

CAN IT BE DONE IN THE WAY WHITE SUGAR IS REFINED?

UPON seeing inquiries in GLEANINGS regarding the possibility of bleaching dark honey by filtering it through bone-black as syrups are bleached before crystallization takes place,

I would say that, as I am considerably conversant with the sugar business, will reply that, as the charcoal filters which are used in our refineries are so very expensive, it would be entirely impracticable for any one in a small way to ever refine his fall honey, even if it could be done. I think, from what I know of the manufacture of sugar from our northern sugar-cane juices, and of the nature of their juices as compared with honey, that it would be very doubtful if any such process would prove successful. In making sugar we treat the expressed juice, first to a lime bath, at a temperature a little less than the boiling heat, about 18.5° Fahr.; then when it is reduced to a semi-syrup it is run in on the top of the bone coal, which consists of burnt animal bone, which is ground nearly as fine as coarse blasting powder. These filters are about 12 in number, generally, and are some 3 ft. in diameter by 12 or 18 ft. high, made of boiler iron riveted together as engine boilers are, in the same way. This saccharine liquid slowly leaches through the filters, after which it is pumped up into the vacuum pan, where it is reduced to the proper density for granulation, and it is then discharged. If honey were to be put through the charcoal filter it would first have to be reduced in density to about the consistency which it comes in from the field, and then be evaporated afterward, so as to give it to again its proper density.

While going through the charcoal, it loses much of its coloring matter; and while there it casts off some of its characteristic flavor. It also takes on a borrowed flavor from the bone black, which, to many, is not pleasant. Now, were honey to be subjected to even the leaching process, I think it would afterward hardly be recognized as *honey* again.

The crude sugars of commerce are not bleached in this way. The sugars resulting from this process make a common brown sugar. The brown, or

crude sugars, are put in molds, and clay is placed on the top of each mold, and water is filtered down through the clay and the sugar, which bleaches it white.

Our bees are jubilant over the enormous white-clover honey harvest which they are garnering up rapidly. They built up surprisingly on the fruit-bloom. C. F. MILLER.

Dundas, Minn.

Thanks, friend M. It had already occurred to me that the honey would have to be reduced with water before it could go through this filter of animal charcoal. Then, of course, we should be obliged to thicken it again by boiling or evaporating; and unless we have expensive apparatus for the purpose, I am afraid we should injure the color and flavor of the honey more than it would be benefited. At present it does not seem as if the plan were very practicable.

CAGING QUEEN-CELLS.

SOME DIFFICULTIES ATTENDING IT.

WE are having a rather poor honey season. We got no honey from clover, to speak of. There was plenty of bloom, but too much rain; and now we are in a great basswood flow, but poor weather for the little fellows to work. One day it was so cold they hardly left the hive, although the day before they had just been rolling in honey; then we have so much high wind here in the prairie, and now it has been raining the most of the time for three days and nights. I have increased from 6 to 18; have sold several queens, and the most of my hives are very strong and active, but they don't take possession of the supers very readily. I put starters in all but part of one frame. I put in small pieces of comb, and those they went right into the same day.

I lost nearly all of the first lot of queens that I had hatch out. I was working away from home, and could see them only nights and mornings, so you know what happened. The first that hatched destroyed the rest, so I fixed some little cages and put the cells in them, and hung a frame full of these in a hive. I have had good success in this way. One cell got badly dented; and when it hatched the queen had frizzled "bangs," or her wings were frizzled or curled up so she could not fly. We tried to straighten them, but could not, and to-day I find another with one wing curled up. What can be the cause? and will they ever get so as to fly?

I saw an article in a book called "100,000 Facts," by one Shafer, in regard to fertilizing queens in confinement, telling just how to do it. I have fixed a cage, and am going to try it. Now, is this a fact or a fancy? If it has been done as long as he says, why haven't we known it before?

Sac City, Iowa, July 22, 1885. JOHN BARLOW.

Friend B., one great reason why we gave up caging queen-cells is, that so many of the queens would be hatched with imperfect legs or wings, especially when we began to have cool nights. The animal heat of a colony of bees is not sufficient for the purpose, only in July and perhaps the month of August. Even then we occasionally have cool nights that produce such results as you mention.—Fertilizing queens in confinement is an ex-

ploded myth, as you will see by the A B C book. It is true, however, that every once in about so often somebody comes up and thinks he has made it a success; but it is usually soon dropped again. I would not advise anybody to waste time with it.

INTRODUCING VIRGIN QUEENS.

SOME VALUABLE FACTS GLEANED FROM EXPERIENCE.

I MAKE a common practice of letting virgin queens run in at the entrance, as soon as possible after a colony has sent out a first swarm. As a large part of the bees left in the old hive are young bees, the queen is hardly noticed, and, true to her instinct, she destroys the queen-cells, preventing all after-swarming. I also remove laying queens and introduce virgin queens at once, with good success, never having lost more than a small per cent of those introduced in this way. My experience has been, that the action of the queen has a good deal to do with safe introduction. If they are strong, and able to stand up for their rights, they are less liable to be killed than weak ones that are just able to crawl.

WINTERING.

We have experimented pretty thoroughly, and have had the best success packed in chaff on summer stands, with good well-ripened honey for stores. Pollen they will not eat, if they have plenty of other stores. When they get out of other stores they will eat pollen rather than starve.

THE FOUNTAIN PUMP.

With one of these we control the clustering of swarms. If they commence clustering on high trees, out of reach, by directing a stream of water on the limb they will leave it and cluster on a lower limb.

ALSIKE CLOVER.

I believe this to be one of the best paying plants for artificial pasturage. We have about 20 acres, and with us it has never failed to yield a fair amount of honey. This season white clover was almost an entire failure, and nearly all of our white honey was from alsike. It is equal in every respect to the best white-clover honey. Aside from the honey obtained from it, it pays well to raise as a hay crop.

BUCKWHEAT.

Buckwheat also pays well in this locality. It seldom fails to give something, and some seasons we get immense yields of honey from it. The best variety which has come under my notice is the "little silverhull." This is far ahead of the old "silverhull," both for honey and grain.

SUMAC.

We have had our first experience with this, this season. It lasted about a week. The strongest colonies stored whole crates (42 lbs.) from this source alone. The honey is darker than clover, but when well ripened it is nearly as good, and is selling at the same price in our markets.

6—O. G. RUSSELL, 24—38.

Afton, N. Y., Sept. 7, 1885.

Friend R., I should agree with you in almost all you say; but this is the first time I ever heard of more than one kind of silverhull buckwheat. Where did the seed come from, and has it been advertised under the name you give it? Alsike clover, I believe,

is one of the few honey-plants that it is safe to go into, and I should think that 20 acres might go a good way toward giving a profitable crop of honey, with the number of colonies you have. When we get that book on buckwheat, and the other on raspberries, we shall want a book on alsike clover.

AN IMPROVEMENT IN HAND FORCE-PUMPS.

THE JOHNSTON PUMP.

THE Smith pump that we have been selling for several years past gives wonderful results, and costs only a small amount of money; but I have always found it hard work to use it, because the power must all be applied directly to the piston-rod, which in my hands wiggles about in an unpleasant way when I am trying to throw water a great distance. It also throws water only while you are forcing the piston down. While in New Orleans, in looking over the "wilderness" of pumps I came across the little pump shown below, and, as a matter of course, I took hold of the handle to see how it worked compared with our own Smith pump.



THE NEW JOHNSTON PUMP.

You will notice that it has a handle like ordinary cistern-pumps; and while this handle guides the plunger, it also gives us a lever purchase, which always seems to me to be quite an advantage. Still further, it throws a continuous jet, or stream, and this stream can be guided in any direction you wish, by simply turning the rubber hose. I was delighted with it, and so was Ernest. I think the agent sold these pumps at \$2.00 or \$2.50. I told him that I had a large trade in our dollar pump, and that if I purchased I must get them so I could sell them for an even dollar. He thought the price was wonderfully

small for his pump; but when I told him that I would give him so much money for a very large number of pumps, he finally accepted my offer, providing I would introduce them far and wide. The drawing explains the whole matter, although I might, perhaps, add that there is an air-chamber in the shape of an extra barrel surrounding the tube that carries the jet (the one to which the handle is attached), and this air-chamber makes the jet continuous. The stream it throws is small, but you can easily make it larger by reaming out the orifice with an awl or pointed instrument. The pump is nicely gotten up, and works like a charm. The prices, both wholesale and retail, will be the same as mentioned in our price list; namely, 2 for \$1.75; 3 for \$2.25; or a case of 10 for \$15.00. If wanted by mail, the postage will be 60 cts. each.

MRS. HARRISON TALKS TO US ABOUT CONVENTIONS.

AND ESPECIALLY OF THE CONVENTION OVER THE WATER, WHERE FRANK BENTON RESIDES.

I WAS laid aside lately for repairs, and while indisposed there was nothing that I enjoyed more than looking at the "migratory shadows" of the members of the New Orleans and Syrian conventions. While looking at the former, it brought many pleasant recollections to mind, as I scanned familiar faces which had gathered there from the different sections of the continent. It was a joyous time, and one long to be remembered.

The "shadows" of the Syrian convention are all strange, yet peculiarly interesting, from the fact that eight different languages are represented by the eleven composing the group. The peasant's daughter, according to the custom of the country, allows us to see but a small part of her face, and as we gaze upon her we fervently hope that her labors for bee-keepers may be remunerative, and be the means of elevating her mentally and socially.

I pity the poor bees that have to live in jugs and cylinders. I don't believe the bees of our country would stay in them; they would desert, and I'm thankful that Mr. Benton is introducing a comfortable hive into their country. The frame may be all right, but it has a wonderfully long name. I've guessed, and I've guessed, and guessed again, how it is held in place, put on my specs, and peered down into the hive to discover something, but failed. Mr. Root, don't you think the ends of the hive have tin or zinc, like this **52525252**? And the hive is reversed by turning it over, is it not?

Peoria, Ill.

MRS. L. HARRISON.

I am as much at a loss as yourself, my good friend, in determining how friend Benton holds those frames, all alike all around, just like a slate-frame. At the Ohio State Fair our old friend Benedict had some hives with similar frames, and they were held by bent wires like those you mention. But the strangest part of it all was, that although friend B. has hives, 20 or 40 of them, in use, in which the frames could be used just as well one side up as the other, he never reverses them at all. He says he does not believe in it. Aren't we human beings "funny," any way?

THE RASPBERRY.

ITS SOIL, AND HOW TO PROPAGATE.

THE raspberry is divided into two distinct classes—the "Black cap" family that is propagated by the tips of the young canes taking root in the soil during the autumn months, and the "Red" raspberries, which are propagated from root-cuttings, or by the suckers, which are produced freely from the roots. The former is of American and the latter of foreign origin, and both, as a rule, produce fruit only on canes of the previous year's growth—the canes which have borne fruit, dying during the latter part of the summer, and during autumn, and the young shoots which started out vigorously from near the surface of the ground, early in the season, taking their place to bear fruit the next year.

The raspberry follows the strawberry in the time of ripening; and while it is one of the most wholesome, refreshing, and agreeable mid-summer desert fruits, it is also largely used in canning and in making syrups, jellies, and jams. The black-caps are easily dried, about three quarts of the berries making a pound of dried fruit, and the market quotations of 25 to 35 cts. per lb. seem to indicate that dried raspberries are appreciated.

That a fruit so highly esteemed by nearly every one should have been so much neglected, can be explained only on the hypothesis that there is a widespread misapprehension in regard to the soil, culture, and pruning required, or that the productiveness, freedom from insects and diseases, and general reliableness of the hardier varieties of the raspberry, have been overlooked or underrated.

In the last five years our Kittatinny blackberry-canines have been killed to the ground twice by the cold winter; and apples, peaches, cherries, plums, grapes, currants, and gooseberries, have all failed once, and most of them several times, from the cold of winter or frosts of spring; but we have gathered five good crops of raspberries in that time. Then the growing of the fruits commonly found in our orchards and gardens means a continual conflict with rabbits, mice, caterpillars, borers, curculios, and currant-worms; but the raspberry bids defiance to all these. With us (and I might say in this section of country) the raspberry is entirely exempt from disease and the attack of insects.

RED RASPBERRIES AND THEIR PROPAGATION.

These, if let alone, will propagate themselves quite freely by sending up young shoots for several feet in every direction. When plants are wanted it is only necessary to let these suckers remain until the proper season for transplanting.

BLACK-CAPS.

These will propagate themselves to a limited extent; but the only certain way to obtain any considerable number of plants is to bend down and bury three or four inches of the points of the canes in the ground. We do this by inserting a mason's trowel four or five inches in the ground, at an angle of about 45 degrees; then, without withdrawing the trowel, the handle is raised a little, and the point of the cane pushed in under the trowel, and held there while the trowel is removed, and the soil firmed over the point of the cane by pressing on it with one foot. This work should be done about the first of September, and the tips of the canes will be well rooted, and ready to transplant, by the latter part of October.

TRANSPLANTING.

It is claimed that plants set in the fall will make a much stronger growth the first year, while the objections urged against fall planting are, that the plants are liable to be heaved out like clover and wheat by the alternate freezing and thawing in winter, and that heavy soils sometimes bake over the plants so as to interfere with the growth. An extra three or four inches of soil drawn up over the plants in the fall, to be raked off in the spring, or a small forkful of coarse manure dropped on each plant in the fall, is recommended by some of those who favor fall planting. Spring planting, as a rule, should be done as soon as the ground is in good condition for working; but when the plants are obtained within a short distance it is possible to make late planting successful. In May, 1883, we put out about 2500 plants when the young shoots were from four to eight inches high. The plants were conveyed, about 75 at a time, some 20 rods in a hand-cart, and I distributed them along the rows, taking care not to break the young shoots, and transferring along with the plants all the clay that adhered to the roots. In setting the plants, one person went along and put the plants in place, spreading out the roots and drawing a little fine soil over them; a second followed, pouring about a pint of water over the roots of each plant; and a third person, with a hoe, finished the operation by drawing an inch or two of dry soil over that which had been wetted. This transplanting was done in a very dry time, but there were not as many as a dozen plants which failed to grow, and they did well enough to yield about twenty bushels of fine berries in 1884.

The old stereotyped phrase, "Plant shallow," has become obsolete within a few years; and at present, most if not all of the successful raspberry-growers advise and practice planting to a depth of three or four inches. By planting at this depth they are less apt to be blown over by the wind, and my experience seems to indicate that they are more apt to live and grow, than when planted shallow.

R. M. REYNOLDS.

East Springfield, O., Sept. 8, 1885.

Thanks, friend R. for your suggestions. It seems to me the outlook is quite favorable for bee-keepers to have a good plantation of raspberries in connection with the honey business. The demand for the fruit is excellent; and with recent improvements in the way of evaporating and drying, there is little probability of any market ever being overstocked.

MORE ABOUT GELSEMIUM HONEY.

SOME ADDITIONAL FACTS.

WITH your permission I should like to make a few remarks in reference to the yellow jessamine, or *Gelsemium sempervirens*, of the South, poison honey, etc. I have lived in the South, and gathered this plant a great many times in its various stages of growth, and at all times of the year—have used the fresh infusion and tincture from the green root, and the infusion and tincture from the dry root, in many forms of disease, and in no case were there any injurious effects from its use, but the most desirable and agreeable results. I have chewed the flowers, and known others to do so, when I have been gathering the vine—have made the infusion from the

flowers, and used it myself, given to my family, and given to others many times in various forms of disease, and found it far less active as a remedial agent than the root, and not the least indication of poisoning in any instance. I think I am capable of speaking understandingly in this matter, as I have made extensive use of the remedy for *thirty years*, and have pushed the use of it to secure its constitutional effects *hundreds* of times, with the best possible results, but always careful to stop the use of the drug as soon as its relaxing effects were secured.

Two instances now recur to me, where it was used with intent to take life—one at the east, in one of the New-England States, the other in Michigan. Both were men, and convicts in State prison. Each man took one ounce of the fluid extract at one dose. Both were thought dead for a short time, but recovered fully without any bad results.

Another case is reported in the American Dispensatory, where a lad took six drachms of the tincture at one dose without any injury.

But there are *two* kinds of gelsemium in the South, and varying so little that I don't think one person in a hundred where I live knew the difference. In botany it is known as the *Gelsemium alba*, or white gelsemium, and is poisonous. The flowers are almost exactly alike in size and shape, bloom at the same time, but a lighter color, some almost white. The vine is larger near the ground, having tendrils like the grape or ivy, a darker color, tapering, and generally not so long; has a larger leaf, and opposite, on long footstalks. The root is light yellow, or almost white, and straight, and about the same length as the medicinal root, a sensibly bitter, disagreeable, sickening taste. The medicinal vine has no tendrils; the root is not sickening nor unpleasant to the taste of most persons. I have carried it in my pocket, and eaten of it daily, and known others to do so, as they ate "calamus" or ginseng, the latter commonly called "sang" in the South. The flowers of the medicinal vine are of a rich beautiful yellow, and impart a very agreeable perfume to the surrounding atmosphere, as fully as a field of buckwheat in full bloom, and freighted to its utmost with its precious burden of nectar.

The flowers of the other variety furnish no perceptible odor or perfume, unless in close contact, and will sicken and vomit severely by chewing or infusion.

The case of the lady from the North, as mentioned by A. T. P., explains as clearly as any thing can that she gathered the flowers of *Gelsemium alba*, and not those of *Gelsemium sempervirens*. A further explanation is also given by the fact that the person who furnished the honey for Mrs. Dukes "lived on the border of a swamp," the chosen habitat of the poison variety, "and that very few flowers of other plants were accessible to the bees," A. T. P. further says, "During the war many of the Federal soldiers who ate freely of the honey found out its deadly effects to their cost, although no deaths followed," etc. Observe, *they ate freely, experienced its deadly effects, but nobody died.* He goes on to say, "The poisonous qualities of wild honey are known to everybody—no one dare eat it." But the Federal soldiers ate of it *freely*. They must have been a tough set of men, that the Confederate guns and deadly poisons only made sick.

Now, there is nothing strange or marvelous in this account at all—just what would happen nine times out of ten, the world over. I know a case

where some honey was brought into a camp of soldiers in Michigan. They ate *freely* of the honey, and in a short time a hundred or more were terribly sick, and I think many of them would have died without immediate help. Many others ate of the *same* honey, and were not sick at all. Why this difference in effects? Two reasons will answer the question. 1. A constitutional difference, and state of the stomach.

2. They ate less *freely*—moderately, temperately. Suppose my horse has not had any grain for three or six months, and I should feed him a full mess, say six or eight quarts of grain feed for the *first* feed. What do you think would become of my horse? I think about the first work I should be called upon to perform would be to haul him away to his grave!

It is a very difficult matter to make people understand the difference between *little* and *much* when eating something they very much like. They seem to comprehend the matter only when the grip of pain is upon them. When I was living on the "Table Lands" of Tennessee, about twenty-five miles from Chattanooga, I was called in great haste to see a family that were taken suddenly and severely sick. Arriving at the house I learned they had cut a bee-tree and brought away a nice lot of honey, and all that were sick had eaten some of the honey. I wished to know how much any one of them had eaten, and, picking up a piece of nice comb, he replied, "A snack about this big, I reckon." Now, a "snack" of the size shown me would weigh $\frac{3}{4}$ of a pound; and with blood in their eye they declared the honey was poisoned, and would throw it away. I proposed, innocently as possible, to take the honey and test it for poison. Very cheerfully they gave me the honey, and I tested it three times a day—as long as it lasted!

A lady lives close by me now whom I think one teaspoonful of honey would kill in an hour. A brother of mine dare not eat *one drop* unless it has been boiled. A son of mine several years ago ate quite freely, when I was extracting, the first of the season, and was made terribly sick. The honey was white clover. Now, in every single instance that has come under my notice of honey-poisoning, it was the large quantity used that caused the trouble. Neither the honey nor the bees were to blame.

When water, cold or hot, will not extract half of the medical properties of the gelsemium in hours of digestion, I can't believe that the nectar, secreted in a single night, and gathered by the bees, can be so destructive to life.

In all I have said in regard to the poison variety, I do not mean to be understood that the bees gathered poisoned honey from the flowers because the plant was poisonous when tested medicinally. This variety will soon sicken intensely, taken in a warm tea or cold. The medicinal will not sicken. It does not *possess* nausea at all. The other day I was talking with a neighbor of Hiram Roop, who told me that Roop stated that the greater part of honey taken from wild bees is stung by the bees, and full of bee-stings, in that State, and is very poisonous. Since that I was talking with another old bee-keeper about poison honey, and I mentioned the account given by H. Roop. He made the same remark, and stated further that he had seen thousands of their stings in a piece of honey no larger than his hand, and that it was very dangerous to eat the honey.

I never had a thought that bees possess so much of the spirit of man that they would destroy their stores, or, what is the next thing to it, make it dangerous or destructive by their stinging the honey.

Elsie, Mich.

N. L. HIGBIE, M. D.

Thank you, Dr. H., for the points you bring out. I have for years been well aware of this fact: That it is not safe to eat heartily of any article of food when it first comes in season; but after having eaten of it for several days, increasing the quantity gradually, I find I can eat a full meal of almost any thing, without any disagreeable results. Nature seems to prefer taking small doses to begin with until she learns how to manage or handle a new article of diet. When she gets accustomed to it, then she disposes of a full meal, or even an overdose, without any "trouble in the camp." It seems to me hardly probable, however, that the deaths to which our attention has been called were produced in this way; still, it may be so. I know that it is quite customary, when a beetrue is cut, for those present to eat honey in excess—sometimes a full pound or more; and if those who do so have not tasted of any honey before for a year, I shouldn't be at all surprised if they were taken sick—yes, severely sick. It is, I believe, well known that people accustom themselves to poison, so as to take doses with impunity that would kill one, not so accustomed, outright. It is in this way that we become hardened, or inured to the effect of bee-stings. In cutting bee-trees, more or less bees are mashed. Sometimes great numbers of them are crushed all through the honey. It would not be at all surprising, if the poison set free from the poison-bags of these crushed bees would produce serious effects where said honey is eaten in large quantities.

A COLONY THAT KILLS ALL THEIR QUEENS.

WHY IS THERE NO HONEY IN THE CLOVER OR BUCKWHEAT?

I WANT you to tell me what ails my weak swarm. I found the queen on the ground one evening, and put her in the wrong hive, and lost her. There was no young brood, and I gave them brood from another. They raised two queens, but I found them both killed this morning, and still no queen or young brood. What had I better do with them? Can you tell me why the white clover and buckwheat have no honey in this year? I have just come from the buckwheat patch. It is in full bloom, and no bees in the patch. The main honey flow was from the basswood. R. H. WHITCHER.

Patton, Ind., Aug. 25, 1885.

Friend W., I can not say why the colony you mention kills all their queens; but in answer to your question what to do with them, you must get a laying queen in the hive by some means. As they have been queenless already for some little time, about the only way to save them would be to give them a fertile queen at once. They probably have some sort of a queen, or something that they consider to be a queen, and she must be hunted out and removed before you can do any thing.—I can not tell why there is no honey in the clover or buckwheat this

season; but I can tell you that it is something that happens once in a while—oftener with buckwheat than with clover. The honey secretion may commence, however, at any time; and if you keep watch I think you will see your bees on the buckwheat sooner or later.

A GLIMPSE AT THE HOME OF ONE OF OUR MICHIGAN FRIENDS.

HIS SHOP AND APIARY, WHERE HE WORKS.

SEND you by this mail a photograph of my chaff-hive apiary of 83 colonies. The little white dots in the yard are white clover. Then comes our strawberry-bed and other garden truck. It being the height of the swarming season, my partner (see Mar. 15 GLEANINGS) is out with the Shepard living-box, and I with my basket, with a piece of comb securely fastened in the bottom, and a handle attached to the outside of bottom, which I much prefer to the box. Mrs. H. stands on the walk leading to the honey-house, with smoker in hand, all loaded, in case it is needed. The shop and lumber are in the background. The grapevines and other foliage show more densely in the picture than they really are. The hives are in rows both ways, and alternate red, white, and blue each way in the rows. Our house stands just to the right, where the walks diverge.

With this short explanation you will comprehend the situation. GEO. E. HILTON.

Fremont, Mich., Aug. 17, 1885.

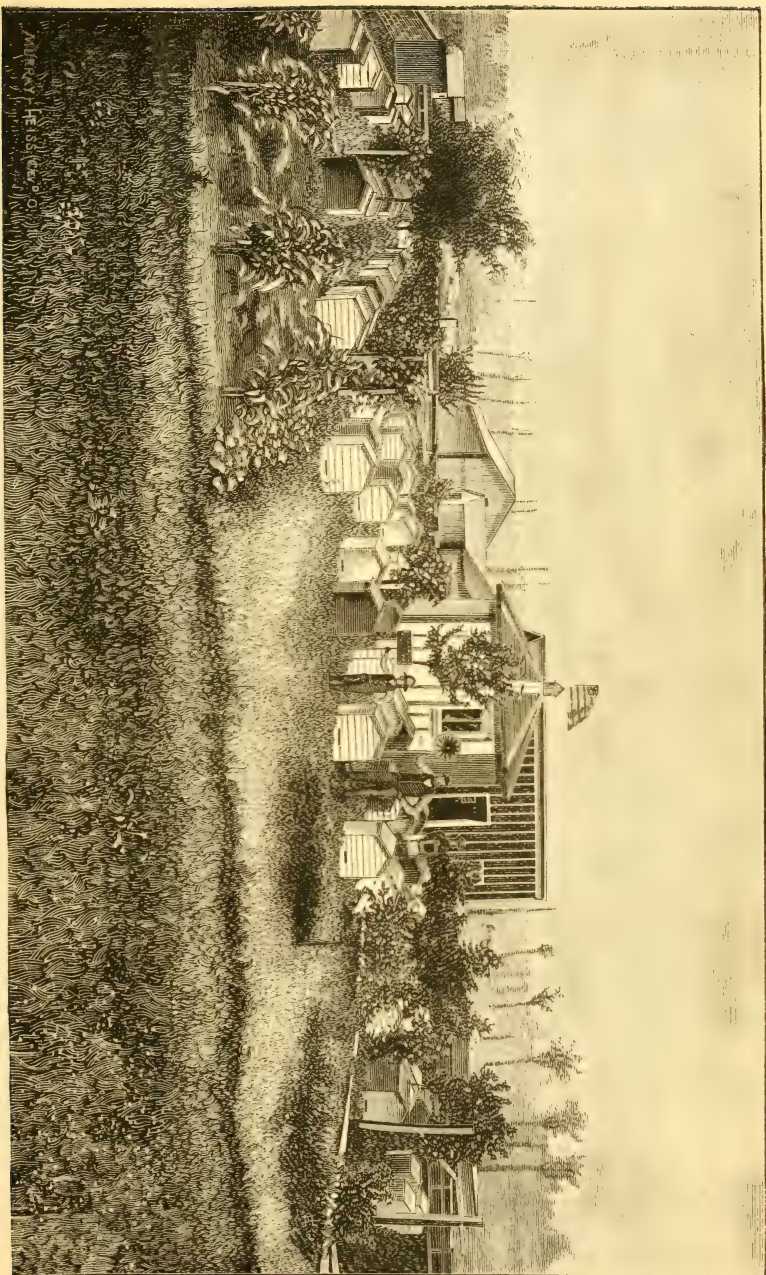
Glad to see you, friend H., and to take a look at your bee-hives and other improvements round about. Your letter is altogether too short. I presume that house with a flag floating on it is the honey-house, but you don't say so. The queer-looking arrangement in your hand, resembling a peach-basket fastened to a pole, is, I presume, for the purpose of taking down swarms. No doubt this will answer an excellent purpose, but they are so easily mashed up is one reason we have not adopted them more. We suppose your "partner" is that little eight-year-old chap from whom we had a letter on page 207, GLEANINGS for March 15. The building right back of the honey-house, striped with white battens, is probably the shop where "Uncle George & Co." hang out their shingle; and that is where the 100 chaff hives were made for that man who lives in Ohio and sent away off to Michigan.

Away back beyond the buildings we get glimpses of the pine-trees, and we presume the secret of your being able to make good work cheaper than we do is partly on account of those same pine-trees. You are right close to the pine regions of Michigan.

Our engraver did not make the white clover very natural, but perhaps he did the best he could at it. We should have been glad to get a glimpse of the strawberries, but they would be pretty hard to show in a picture.

Well, good-by, Uncle George & Co.; and we hope you may have lots of business and much prosperity; and, more than all, that your little partner, and his uncle too, may both be led in wisdom's ways.

APIARY AND WORKSHOP OF GEORGE E. HILTON, FLEMONT, MICHIGAN.



SWEET CLOVER.

HOW MUCH HONEY WILL AN ACRE OF SWEET CLOVER YIELD?

I WISH to say a word in favor of sweet clover, to the many bee-keepers who read GLEANINGS. Many years ago, long before I kept bees, I read in the *American Agriculturist* of sweet clover as an incomparable honey-plant. We read in A. I. Root's catalogue: "The statement has been made, that an acre will support 20 colonies of bees, and afford from 500 to 1030 lbs. of honey." The statement is not too high, as I will show.

Four years ago I bought of A. I. Root 4 lbs. of sweet-clover seed. I sowed the same in April, with oats, on one acre of land, and got a very thin stand. I think the oats smothered it out. The next year it blossomed and seeded, but there was not enough of it for me to determine its merits as a honey-plant. Last year there was a thick mat of green growth, but no bloom. This year nearly the whole patch was covered with a dense growth of clover, which commenced to blossom about the first of July. Basswood opened about the 5th of July, and bees left every thing else for that. Immediately after basswood they went on to the sweet clover, and for about three weeks there was a continual roar of bees from "early morn till dewy eve."

I had, at the close of basswood, 35 colonies; increased during sweet clover to 46. At close of basswood I took off all sealed boxes of honey; at close of sweet clover I had over 500 lb. boxes of sealed honey, all from sweet clover, as every one in Western Iowa knows there is no bloom after basswood until blackheart, that yields honey. During this honey dearth the queens almost quit laying. Now, sweet clover fills up this gap; besides the surplus honey gathered, the hives are kept full of bees and brood, in the best of plight for fall bloom.

I should say, that the 35 to 45 colonies would use, in raising brood and filling up brood-frames, not less than 500 lbs. during the three or four weeks, making 1000 lbs. of honey from the one acre. The bloom can be prolonged until frost, by clipping off the tops, say 18 to 20 inches, when first seeds begin to brown.

To my Western friends, I think I can not urge upon them too strongly the importance of filling up the gap between basswood and blackheart, and sweet clover does it. To have the bloom every year you must have two fields, one following the year after the first, as it blooms only alternate years. I think one acre sufficient for 20 colonies.

Hillsdale, Iowa.

E. W. FITZGER.

Friend P. I am very much obliged to you for your report of sweet clover; but 1000 lbs. from one acre during four weeks seems to me almost incredible. If you will see what I say about the amount of honey that a single plant will yield, under the head of "Spider Plant," in the A B C book, you will see what an enormous quantity each plant must produce. Each blossom of the sweet clover would have to literally drip with honey, to give 1000 lbs. to the acre. Now, the spider and Simpson plant do drip with honey, but they don't furnish any such amount; and from careful examination of sweet-clover blossoms in localities where no bees have access, I can not feel satisfied that the amount of honey secreted in the blossoms is

very large. I am forced to the conclusion that your bees must have secured this quantity of honey from some other source. I may, however, be mistaken. I should be very glad indeed to believe it were possible for sweet clover to do what you claim.

FALSE STATEMENTS IN REGARD TO THE HONEY BUSINESS OF OUR COUNTRY.

As a protection to our bee-keeping population, we propose in this department to publish the names of newspapers that persist in publishing false statements in regard to the purity of honey which we as beekeepers put on the market.

MANUFACTURED HONEY.

WE are pleased to give place to the following excellent leading editorial by the *British Bee-Journal* of Sept. 1:

"The first work that came to our hands when we entered upon our vocation as a bee-keeper was that of Langstroth on the *Hive and the Honey-Bee*; and though these 'solid days' have long passed away, we have never forgotten the wondrous fascination of his charming style and the practical information we derived from the perusal of his work; and deep and sincere has been the gratitude we have ever since felt toward this 'old man eloquent' for all the pleasure and the instruction we received from his teachings. There was, however, one passage in his book which we would fain have wished had been omitted, and that was his recipe for making a beautiful liquid honey, which the best judges have pronounced one of the most luscious articles they have ever tasted. 'Making honey.' What an incongruity of language! Honey is the symbol of all that is natural, pure, and genuine; honey has been the theme of poets from the time of blind *Maenoides* to the present day; honey is the joy of age and youth; honey is the sweet, rich, bright 'effluence of the essence' of flowers, the most delightful and delighting of all the productions of nature; and we can never see the words 'artificial' or 'manufactured' conjoined with it without uttering an internal protest.

"We are, however, too apt to think that adulteration is confined to American honey; but the denunciations of honey mingled with glucose, etc., have been uttered as earnestly and as frequently by American as by British bee-keepers. In Cowan's *Guide-book* are to be found extracts from American journals, stating the extent to which adulteration is practiced in that country, and vigorously denouncing the practice. It is not only in New York or Chicago that this so-called honey is manufactured. In Switzerland this 'manufacture' is carried on to a large extent; the analysis of Mr. Otto Hehner informs us that the 'Finest Swiss Honey,' and the 'Finest Swiss Table Honey,' are 'to a certainty adulterated'; and yet this honey is to be found on the tables of all Swiss hotels, and is said to be much relished and patronized by English travelers.

"But, why need we look abroad? In our own country the manufacture of honey is carried on largely. Our attention has recently been directed to a wholesale price current of a city firm in which '—s Manufactured Honey' is advertised; and by it we are informed that 'the success of this article seems assured, and that the orders have come in so rapidly that the manufacturers have been unable to cope with the demand.' We have not handled or seen or tasted this 'article,' and therefore are unconscious of its virtues. It may be a most luscious produce, and suitable to the British palate; but, why call it 'honey'? Is not our language rich enough in itself to give it some other name, or would it not have been possible to derive from the Latin or the Greek some other appellation than that of our much-loved and time-honored term 'honey'? Honey is associated with our earliest (we had almost written 'our holiest') ideas of all that is sweet, pure, and perfect. The royal Psalmist can find no loftier comparison of his love to the 'words' of God than to honey,—'honey and (do we not almost hear the smacking of the royal lips?) the honey-comb.' 'How sweet are thy words unto my taste! yea, sweeter than honey to my mouth.' The Wise Man shows his appreciation of the virtues of honey by the wholesome advice he gives: 'My son,

eat thou honey, because it is good; and the honey-comb which is sweet to thy taste." The Easterns, when they wish to describe the advantages and fertility of a country, speak of it as "a land flowing with milk and honey." And therefore it is that we have so decided an objection that this grand superlative word should be degraded to that of a humble positive by its association with such adjectives as "artificial" or "manufactured." Are bees to be surprised in future by the devices of ever-modelling Man? Are we to pronounce that their "occupation is gone"? Is honey to be placed before the light of this new production? Not yet, we opine. Never was there a time when the culture of bees was more attended to; and never was there a time when men's minds were so exercised as to discover fresh outlets and new utilities for honey in the shape of confections, drinks, medicines, etc. We believe that yet there is a great future in store for the products of the honey-bee; and we trust that pure unadulterated honey will ever hold its position, and that our friends of the British Honey and Fruit-farming Companies will put forth every effort to penetrate to every hearth and home, and to establish the virtues of pure honey, and to prove to a discerning public the superiority of British honey, not only to the "manufactured article," but also to that which is so largely imported from foreign countries."

We wish especially to call attention to one point in the above excellent paper: and that is, the absurdity of labeling a manufactured article *honey*. Call it table syrup, nectar, golden drip, or what you choose, but don't call it honey. If it is good and wholesome, and people are satisfied with it, let them have it; but for pity's sake don't tell a falsehood on the label. The writer of the above justly declares that honey has been, and ought to be now, an emblem "of all that is sweet, pure, and perfect." And now why not let it be so still? I presume our good old friend Langstroth never dreamed of making a bad precedent when he spoke about a "recipe for making a beautiful liquid honey." Certainly he never thought of encouraging the idea of labeling goods falsely. If anybody wants corn syrup flavored to order, let him have it; but by all means have the label plain and honest.

I inclose a slip cut from *Hibou News*, Brim Mawr, Pa., on honey adulteration. N. J. ISRAEL.
Bealsville, O.

ROGUS HONEY.

The *Maine Farmer* is opposed to fraudulent practices, whether by the farmer or the living creatures under his care. In regard to the practice of making honey out of sugar by the simple process of putting it through the honey-comb, it says:

If the bee can get a living on his front doorstep he will go no further for it, even though acres of white clover are near. If sugar and water, or any suchlarine matter, be placed in the hive, or near it, the bees will store it in comb as long as it is provided. They handle it as carefully, and pack it away as neatly, as though it were honey; and when it is sealed, and offered for sale in handsome white boxes, it is apparently pure honey. Is it not a shame that the bee should be employed to carry on such abominable swindling? The bee-keeper who uses this method says: "Most persons can not tell by the taste whether it be honey or not." This may be true, because honey is not on the table often enough to make itself known. Experts, even, have failed sometimes to detect a counterfeit piece of money, but this did not help the counterfeiter, who went to jail as soon as found guilty.

Some bee-keepers report a yield of two and three hundred pounds of surplus comb from a single colony in one season, and they tell how 'twas done; and more and more, they advise others to adopt their method; namely, feeding sugar and water at a cost of not more than five cents a pound, and selling it as pure honey for twenty-five and thirty cents a pound. This practice does more to injure and bring into disrepute the honey trade than any thing else

said about it or carried on in it. It is rank dishonesty and cheating—that, and nothing less. Bees must be fed sometimes in the fall, to help them through the winter, and spring feeding is practiced to stimulate brood-raising, that the hives may be full of workers when the honey harvest begins; but every honest bee-keeper should use his influence against the comb-honey imposture—against the turning awry of the original purpose and design of the bee.

Very good, friends of the *Maine Farmer*. But I want to take exceptions to just one little statement you make—"some bee-keepers," etc. Now, I am pretty well conversant with all the bee-journals published in the United States, and I am acquainted with most of the prominent honey-producers, but I have heard of only one bee-keeper who tells how to feed sugar for getting comb honey, which can be sold as honey. The one bee-keeper is Mrs. Lizzie Cotton, of Maine, and I protest against classing her among our honey-producers; and I protest, too, against calling her "some honey-producers," and against using the word *they* in speaking of her. Please say one of the bee-keepers, will you not, Mr. *Maine Farmer*? and instead of using the pronoun *they*, put it *she*, or else tell us who else in our broad land has ever publicly advised feeding sugar, and selling it for honey. Mrs. Cotton has replied to some of the charges made against her, but she has never yet replied to this one, nor has she changed that chapter in her book, that I know of. Will Mrs. Cotton please take notice?

WANTED A SITUATION.

A NOVEL ADVERTISEMENT.

OUR irrepressible friend Mrs. Chaddock asks us to publish the following. We would give it a place in the advertising columns, if there seemed to be any way by which she was going to make a speculation out of it. Here it is:

I want employment somewhere in the South, during the months of January and February next. I will work for my board. I would rather act as companion to some rich old lady, or be employed to read to some one; but I am not very particular. If I can't get either of those positions, my next choice would be to drive a mule team, and sell or peddle honey. I like a mule team first rate, they seem so light-hearted and free; but if a chance offers for me to sell honey for some one, I won't quibble about the kind of team. I can drive horses very well.

Then I should like picking oranges (are oranges ripe then?) and rolling them in tissue paper to send north, or I could feed pigs and pick geese, if no other work offers. The reason I want to go south is on account of my health.

If any one thinks of employing me, I will furnish references of good character and industrious habits.

MAHALA B. CHADDOCK.

P. S.—I would rather go to Florida. M. B. C.

Now I wonder if I am not Yankee enough to guess what you are up to, my good friend. Of course, when you get to driving that mule team, and selling oranges and honey, you will write to some of the papers, and tell us of the adventures you have. Well, we have no objections at all, providing your notes by the way are sent to GLEANINGS.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

THE QUEEN THAT LIVED TO BE FIVE YEARS OLD;
MORE ABOUT HER, ETC.

YOU ask if I may not have been deceived in the queen reported to be five years old. Possibly I may by a young queen entering the hive and taking her place; but I have no idea that I was, for I watched her closely, and I think I should have known her from any other queen I ever saw. Her swarm did not dwindle. The only time I ever had spring dwindling in my apiary was when I lost 16 out of 32 by it. I bought her mother of a Mr. King, in Columbus, Ind. I do not know how old she was, but the hive was marked, "Commenced laying June 6." She remained in my apiary three years and ten months, leading out a swarm each year, dying 50 days after her last swarm issued. I bought her the last of September. Her wing was clipped, so I am certain she was not superseded.

Since you referred to it, I do remember having read Mr. Doolittle's statement, that "queens raised in a hive with an old queen are always good." I have now in my apiary an imported queen which I bought of Messrs. Charles Dadant & Son, in April, 1883, which must now be in her fourth year; and notwithstanding her long ocean trip she shows no signs of decay at this writing.

GLEANINGS, Sept. 1, 1885, page 587, first column, bottom line, read "mother" instead of "other;" second line from bottom, leave out "raised." The way it reads, it would imply that fall-raised queens are rarely superseded, but I intended to say that queens are rarely superseded in the fall.

Patterson, Texas, Sept. 15, 1885. E. S. ARVINE.

COMB FOUNDATION WITH LONG CELLS.

Why do not some of you bee-men get up a foundation-mill that will make cells longer one way than the other, for the surplus department, something like stretched foundation? as experience shows that bees never use misshapen cells for either brood or bee-bread, as also that they never put pollen in drone-cells.

We had honey-dew stored with such a strong resinous taste and smell as to be nauseating.

I have sections, regular size, $4\frac{1}{4} \times 4\frac{1}{4} \times 2$, as you term them, while what you call odd sizes, $4\frac{1}{2} \times 4\frac{1}{2} \times 1\frac{3}{4}$, sell readily. Reason, bees cap the honey more promptly, and it sells more promptly, being a more showy-shaped pound, although containing slightly less cubical contents. H. B. SPERRY.

Nokomis, Montgomery Co., Ill.

Friend S., we made just exactly the kind of fdn. you describe, in some of our earlier experiments, but we did it by accident, and because we could not do any better. The fdn. did work, too, a good deal as you mention; that is, bees would not put brood in it, and for that reason no one wanted it, and the rolls were broken up and worked over.—We suppose you make your section boxes larger while you make them narrower, so as to retain the weight at as nearly a pound as possible; but all the comb honey we are selling this season is in the usual $4\frac{1}{4}$ by $4\frac{1}{4}$, by a little less than 2 in thickness. Of course, they do not hold quite a pound; but instead of being an objection, it seems rather to please our customers better.

SPAFFORD'S DRONE-EXCLUDER.

I notice in last GLEANINGS a communication of my esteemed fellow-townsmen B. F. Spafford, describing his drone-excluder. I wish to say it does the work. I favor a modification of it—a very simple one, I herewith send you, which is a diminutive model. This gives two drone and two worker passages. In experimenting I found that the drones in trying to get out would so obstruct the passage as to greatly hinder and annoy the bees. I found, on removing the excluder, a row of drones all along the passage, and there would be a frantic rush by all to get out. The form I send can very easily be made of tin or zinc at a trifling expense. S. Y. ORR.

Morning Sun, Iowa, Aug. 21, 1885.

I will explain to the friends, that the little model sent by friend O. amounts to about the same thing as the Jones entrance-guard, only it is quite a little longer, and the ends are left open. The drones, being unable to get through the perforated metal, finally go out at the ends; but on coming back they try to enter at the usual place of the worker-bees. No doubt this will work all right, and obviate the difficulty mentioned. The only point to be determined would be the proper length. If made too long, the drones might not find their way out through the open ends; and if too short, they would get in where they go out. To determine this, many experiments will be needed. Meanwhile we extend our thanks to friend O.

WHY DID THEY SWARM OUT?

A few days ago, about 10 o'clock my little brother came running to me and told me the bees were swarming. Well, thought I, something's wrong. They were coming out of a hive containing a first swarm, hived June 11 on 8 sheets of fdn., the queen at least a year old, and having a crippled wing. I couldn't find the queen, high nor low. The bees all came back. Upon examining the hive I found that they had not more than a pound or so of honey in all, so I first thought it was starvation. But by removing the frames I found three solid full of capped brood, others containing uncapped larvae, lots of capped drone-brood (this was a frame of natural comb), and many queen-cells capped.

Now, what I should like to know is, were they trying to supersede the old queen, or was it starvation, or something else? I have but 3 colonies of my own, and 3 belonging to father, to attend to (am as yet an embryo apiarist). Five out of the six, including the one described above, have drones, or drone-brood; 3 have queen-cells started; none of them have half enough winter stores. They are strong in bees, having good prolific Italian queens, all but two being young. We have had a very poor honey season; not a drop of surplus. Bees have consumed stores in brood-rearing; plenty of corn pollen. Please tell me what's wrong, and what to do.

Chandler, Ind., Aug. 21, 1885. ALVIN L. HEINE.

Friend H., my impression is that it was the dearth of honey that caused the swarming-out. When no honey is coming in, and especially when none comes for a period of several weeks, bees oftentimes show strange freaks; and it is not infrequent for them to swarm as you describe, just because their stores are going daily, and are almost gone. They seem to get desperate, as it were, and want to do something, even if that some-

thing be jumping out of the frying-pan into the fire, as in your case.

QUEENS, VEXATIONS IN INTRODUCING.

I am just a beginner in bee-keeping, yet I have had my share of trials and vexations already. I should like to inquire what causes my bees to act so unreasonable when I am trying to introduce a new queen. I keep Mrs. Queen caged 48 hours; and if the bees act rough toward her I cage her again; and then, if they act kindly, and accept her, I release her. On three different occasions this season they seemed to accept the strange queen; but in the course of five or six days I would find them fighting and stinging each other in the same hive. They have kept this up for a week or ten days. I have opened the hive and found them balling or hanging to the queen's wings, legs, etc., and they finally kill the queen. Then I have taken a frame from another hive, with bees and queen, and given them, and they would accept her. What can I do in such cases? It is discouraging to lose so many valuable queens. H. M. PARKER.

Plymouth, Ohio, Aug. 18, 1885.

Friend P., I can not say why your bees act thus, unless it is because of a scarcity of stores. During a protracted dearth of honey, bees often act in just the way you mention. Feeding will probably remedy the trouble, providing you use care, and don't get any robbing started. Perhaps you have found out the remedy already.

WINTER ENTRANCE FOR BEES WHEN PACKED IN BOXES.

In packing bees for winter in boxes, how large ought the opening to be from the entrance of the hive to the outside of the box? S. K. FUSON.

Rockville, Ind., Sept. 17, 1885.

Friend F., I would have the entrance on the inside $\frac{1}{2}$ inch in width, in order that we may exclude mice. The length is not material, but I would have it as much as eight or ten inches, in order to give a good air-space. We have found, by careful experiments, that our bees winter better with the entrances to our chaff hives open full width than where contracted.

WORKERS THAT CAN'T FLY: 50 LBS. OF HONEY BESIDES THE INCREASE, FROM ONE POUND OF BEES.

I received a queen with 1 lb. of bees from Louisiana—a good prolific queen, only hundreds of the workers can't fly. They look all right, only they spread their wings when they crawl around, and have not the power to fly. They leave the hive when a few days old, and die a few feet from the hive, in clusters, and scattered here and there. Said queen is superseded. They had a young queen laying 14 days, and I put the old queen in a hive, and she is laying finely. The one pound of bees have made, to date, 51 lbs. extracted honey, and I have taken away four frames of brood, and they are heavy now. E. E. SMITH.

Clayton, Mich., Sept. 11, 1885.

CLEANING SMOKER-TUBES: SOMETHING FURTHER ABOUT IT.

I have read in GLEANINGS of several different ways of cleaning the Clark smoker, so I will give you my way. Take a large wire, about a foot long; make a loop on one end for a handle, and bend the other so as to fit the pipe of the smoker. Every time this wire is used, the end that fits the pipe should

be heated quite hot. As the wire is inserted, the heat will soften the gummy matter so that the pipe can be cleaned very easily. I prefer heating the wire to any method I have seen yet. Also a word in regard to fuel. Rotten wood is good, but hard to get. Rags emit a disagreeable odor, and gum the smoker. I keep, in the center of my apiary, a box full of small chips from the dooryard, and I find that they burn as long, make the hottest fire, and keep the smoker the cleanest, of anything I have used yet. Wood of any kind burns well in a smoker; if dry, we need not be particular about it.

Lone Tree, Ia.

ROWLAND SHERBURNE.

A DAILY RECORD OF ONE COLONY: 134 LBS. OF HONEY IN ONE WEEK.

My swarm on Fairbanks scales gained, July 17th, 16 lbs.; 28th, 17 lbs.; 29th, 17 lbs.; 30th, 18 lbs.; 31st, 23½ lbs.; Aug. 1st, 24½ lbs., an hour before they stopped work, when I extracted them; they would have gained 2 or 3 lbs. more by dark. Aug. 2d, 17 lbs. I weigh and balance them every evening, making 134 lbs. gain in a week, and no mistake, in a two story chaff hive, and I divided them in June. I have extracted, so far, 3150 lbs. basswood, and not over yet, but drawing to a close. I have taken off no sections yet; have regained my loss in bees in wintering and springing. C. G. DARLING, 40—80.

Lincolna, N. Y., Aug. 3, 1885.

BEES IN LOUISIANA.

My bees are doing their level best; the honey is dark, for which they are not to blame, but it is very clear and sweet, with a fine flavor.

The "New South," as our Northern friends call it, is looking up here. Our cotton, corn, and small-grain crops are splendid. The cotton is yielding largely this year, and I shall have some of the honey saved separate. The blue and white water-pepper is beginning to bloom, and is yielding well. The ever-blooming elm is also full again, and bees are swarming on it.

About eight miles from us is a place where buzzards roost, and they have killed the trees for acres and acres. A man near us cut five trees in one day with bees in them, just around the buzzards' roost, and he says that just when the buzzards commence alighting on a tree having bees in it, the bees leave it and go to another, and that he can count 100 trees on ten acres, with bees in them. The neighbors cut a bee-tree near us last Saturday, and on Sunday the bees came to me. I think my honey-gatherers led them home. I put them in a hive, and they are doing well. ST. J. T. MOORE.

Monroe, La., Aug. 9, 1885.

We are glad to hear so good a report from you, friend M.; but I can't quite understand why there should be bee-trees where the buzzards roost, unless it is because there are more dead trees, and therefore more hollow trunks. But, why is it that the buzzards kill the trees? Is it because of the unpleasant smell they carry with them?

DO MARTINS EAT BEES?

Will you kindly give me your opinion on the following question? I have a fancy martin-box in my yard, in which 12 or 15 birds have made their homes, and are rearing their young, and my neighbor has several colonies of bees which he claims are suffering through the depredations of my birds. He claims that they carry off his bees to feed their young, and asks me to destroy the birds. I think a

great deal of my birds, and do not wish to sacrifice them until the fact is fully established that they are an injury to my neighbor. The birds are company for me, and are also useful in keeping the hawks away from my poultry. I know professional bee-men in Ohio (my native State), and also in this State, who keep martins on their premises, and it strikes me they would not do so if the martins ate their working bees.

A. V. LYLE.

Cline, Texas.

Friend L., I am sorry to say that martins do sometimes learn to eat bees; and, for that matter so do common fowls occasionally. It seems to be an acquired habit, like hens eating tomatoes, cucumbers, and the like. Sometimes, when short of food, they get the hang of it and remember it as long as they live; and then, again, they never notice them at all. I would try placing plenty of such food as the martins prefer, where they can get it conveniently, and may be they will give up bees. When any of the feathered tribes, however, discover what a sweet morsel a heavily laden bee is to the palate, it is not so easy to get them over it. Perhaps when the bees cease gathering honey, and stop tumbling around their hives, heavily laden, the mischief may cease.

HOW TO MAIL QUEENS SAFELY.

Many of our friends north ask for our secret in always sending queens safely. Our losses up to July 30th were one-fourth of one per cent. We use well-ripened honey (ripened in the hive), and pure pulverized sugar. Make it so that it will not run—not too thick. Make it as you need it for *each mailing*, and mail the queens as soon as the cages are ready. Send out no queen that is not a good layer, as this is the proof of health and condition. Use precaution in caging; be very careful in handling her majesty. We rarely touch her. Do not use the smoker. We use the Peet cage for mailing, and send from Oregon to Maine without loss, other than delay, or, we should say, astrays. J. W. K. SHAW.

Loreauville, La., Aug. 13, 1885.

RETAILING EXTRACTED HONEY IN WALNUT SHOW-CASES.

I have had a great many large show-cases, built of walnut and ash, to hold a large quantity of box honey and ornamental tumblers of extracted, and have placed them in the principal stores throughout the city, and they keep account of what they sell, and settle whenever I say so. They seem to prefer this plan rather than paying cash for a single crate of 18 boxes; because whatever they can not sell I have agreed to take back, and they receive their percentage on what they sell. But this plan has almost blocked out all the sales of all the small bee-keepers who used to sell small quantities for cash. They, of course, don't like my style of doing business; but my aim has always been to be ahead in the honey line, although I find myself behind in some others.

J. C. SIMMONS.

Pottsville, Pa., Sept. 4, 1885.

IMMATURE BROOD; WHY DO BEES CARRY IT OUT?

Will you please tell us what makes our bees uncap and carry out of the hive hatching brood from new combs on foundation? They are strong in bees, have plenty of honey and brood in all stages, and no signs of moth worms in the hive.

Quincy, Mich., Sept. 4, 1885.

M. J. RAWSON.

The above question has been answered

quite a number of times this fall. I know of only two causes to produce such results. The first is, scanty stores, or, in other words, starvation. As a last resort, the bees will uncap the larvæ to suck the juices, and the lifeless bodies will be seen scattered around the entrance. The other cause is the work of the moth. The moth worms often tunnel under the bodies of the brood; and the bees, in their efforts to dig out the mischief, will sometimes tear considerable brood, sacrificing the life of some of their offspring, as a last resort to save the life of the whole colony. I have never known this sort of trouble to be worse on new combs of fdn., but usually to the contrary.

DOES A FERTILE QUEEN EVER LEAVE THE HIVE, EXCEPT AT SWARMING TIME?

Would the queen I got last spring leave the hive and go to another, eight feet away?

Azle, Texas, Sept. 11, 1885. O. L. KIMBROUGH.

Friend K., this question has been discussed quite a little in some of our back volumes. As a rule, a fertile queen never leaves a hive except with a swarm; but there seem to be some exceptions to this rule. Thus, queens have been found in a hive several feet away, without any apparent explanations in the matter. We once found the queens had changed places in two hives, about the distance apart you mention. One of them we knew, because both of her wings had been clipped entirely off. Such changes are sometimes made while extracting, the queen being carelessly shaken in front of the hive, and by mistake crawling into some other one instead of her own.

CARNIOLAN BEES, AND HOW TO DISTINGUISH THE CROSSES.

I concur with the article by Dr. E. K. Blanck, on page 596 of GLEANINGS, but I now feel safe in saying something more of Carniolan bees. You ask how we shall distinguish crosses with our native bees. I answer, by their behavior, if not by color. I have not seen a cross by native drones; but whenever we get in any bees the disposition of unrest belonging to our native race, we will reject them. Carniolan bees are not disturbed by lifting their combs from the hive; and I believe it will be found that their cross with blacks will be a very much better race than the cross of Italians with blacks.

Another point I make for Carniolan bees is, that they are more readily gotten off the combs and sections when you want them off. This trait will commend them to all, for it is a matter of importance when robbers are around thickly. They again differ, as widely as can be, from our black bees, when shaken off the combs, in not flying around, but at once crawling into the hive again. Carniolan queens, when mated with Italian drones, produce some beautiful bees, some having three bands and some none, but all with the gray or white bands of down, behind the yellow bands. I send you a cage with some of these bees. I have finished requeening my whole apiary of 62 colonies with Carniolan queens. I repeat, let us choose queens on account of their quality, and not on account of their dress.

S. W. MORRISON, M. D.

Oxford, Pa., Sept., 1885.

Thanks, friend M., for the cage of bees, and for your suggestions. I agree with you

in regard to the importance of choosing queens on account of their honey-producing qualities, rather than on account of any accidental stripes they may possess.

IS THE WATER-OAK HONEY INJURIOUS TO BEES?

I have a small lot of bees, only 24 stands. The bees in this section of country gathered honey from the water-oak. It is not fit to eat, and I am much afraid it will injure the bees. If you can tell what is the cause, let it be known through your journal. There is no one in this section who can tell the cause. They gathered that stuff in the month of May last year.

F. B. FULKERSON.

Barnard, Kan., May 31, 1885.

Friend F., I think the honey you mention must have been the product of aphides.—There has been considerable said in our back volumes in regard to honey from the oak. Some of it is unpleasant, like that you describe, while other specimens rank very fair. I should dislike to go into winter quarters with stores of such honey as you refer to.

THAT BEE-DISEASE, AGAIN.

Will you please inform me what ails my bees, and what shall I do to cure them? In March, two stands of Cyprians commenced dying off, and at this time all of my Cyprians, Holy-Lands, and Italians, are afflicted. They get black, and have a shiny or glossy appearance, also a jerking or tumbling movement, and they nearly always get on their backs to die. I have 41 black swarms, and they are not diseased. I have perused your A B C book, and you said at that time, when it was printed, that you did not know any cause, and that you had had only one swarm that was diseased, and that you put it with another, and that it came out all right.

C. K. DECKER.

Hanford, Tulare Co., Cal., June 8, 1885.

Friend D., the only remedy I have ever found is to destroy the queen and put in a new one, as mentioned in the A B C book, and I have never yet known a case of failure. From this it would seem that the disease is something inherited from the queen. A new queen produces new bees, and these new bees don't seem to be subject to the malady.

HORSEMINT HONEY.

I am perfectly astonished at the large honey-dealers of the North. I am all out of patience with them. I don't know why they could be so prejudiced against horsemint honey (for it certainly is nothing more nor less than a prejudice). The plant itself has a nice odor. Some people make tea of it to drink, and it is a good medicine for summer complaints. Now, why not have good honey from it, I'd like to know? It is just like giving a dog a bad name, and he is sure to go by it. Horsemint honey is almost always gathered in a dry time, and is generally thick and nice, just from the hive. There is a sad mistake about it, some way or other. I think it is the mildest honey that is raised in the South.

Bracken, Tex., Sept. 2, 1885.

N. J. W.

Friend W., the most of the horsemint honey that has been put on the market was not sufficiently ripened, and as a consequence it had a rank taste that few people would call pleasant. Give us a nice article thoroughly ripened, and I think it will rank fairly by the side of any we have. The honey itself should be able to overcome the prejudice.

TROUBLE IN REMOVING WIDE FRAMES.

I want to give you a little of my experience with section boxes and frames. I was taking some honey lately, and found my wide frames all fast. The space between the upper and lower frames was all filled with honey; and in trying to get the first wide frame and section boxes out, the frame and some of the boxes pulled to pieces, so I about came to the conclusion to abandon the section boxes, if I can't find some remedy. I found my narrow frames with comb built from one to the other, and they had to be cut apart to get them out. What shall I do about it? I have thought I had better abandon the section boxes and use only the narrow frames.

REV. E. C. COX.

Centerville, Leon Co., Texas, July 21, 1885.

Friend C., the Heddon honey-board remedies the trouble you mention, of attachments of comb to the wide frames, or to the cases containing section boxes. The reason why you found your narrow frames built together solid was because your bees had their hive full, and hadn't room to store their surplus. Give your bees more room, and look them over oftener.

SPAFFORD'S DRONE TRAP.

I see you have Spafford's drone-excluder in your last issue. I tried one on the same principle this season, and it did not answer, because it blocked the entrance for the worker-bees; the drones being heavier than the workers, they stopped all ingress; but my trap does away with that difficulty.

Elora, Ont., Aug. 28, 1885.

G. STRANGWAY.

Thanks for your report in regard to the drone-trap, friend S. I will explain to our readers, that the one you describe is essentially the same thing as figured in our pages a year or two ago, and described in the A B C book. I think the difficulty with the Spafford drone-trap can be obviated by making more openings for the worker-bees.

WILL MAPLE SYRUP ANSWER FOR WINTER STORES, ETC.?

Will you please tell me, through next GLEANINGS, if maple syrup, tintured with tartaric acid to prevent crystallization, will do to feed bees on for winter stores, without giving any bad effects, such as dysentery?

T. H. WHEATLEY.

East Brookfield, Vt., Sept. 18, 1885.

Friend W., tartaric acid would do no hurt, for it has been repeatedly used to prevent granulation of cane sugar; but I am afraid that the maple syrup you would be apt to find would hardly be sufficiently free from foreign matter, such as maple syrup always contains, to render it a safe feed for winter stores. A nice article of maple syrup would answer, without doubt; but if you have a nice article you surely can not afford it for your bees, for it would command, in almost any market, double or treble the price of a syrup made of granulated sugar. Any sort of sugar must be pretty nearly chemically pure, to be proper food for winter stores, and the granulated sugar of commerce is, as a rule, the cheapest of any you can get for the purpose, for it is refined in a wholesale way, so that the cost of getting it in a remarkably pure state is comparatively trifling, while the maple syrup usually to be obtained, and, in fact, all other kinds of syrups, in-

cluding honey itself, as the bees usually gather it from the flowers, contain a vast amount of foreign substances, which are quite likely to make it unfit for such a diet as the bees require when kept for months in confinement as they are during the winter.

Inclosed find a piece from the New York *Sun* of August 3d. It may be well for you to keep track of that station, to inform your readers.

Bees are making but little honey this summer. They are at work on buckwheat now. We shall get but little honey from it, as it will be a short crop.

GEORGE RICHARDS.

Harpersville, N. Y., Aug. 11, 1885.

EXPERIMENTS IN BEE CULTURE.

An agricultural station has recently been established at Aurora, Ill., in connection with the entomological division of the Department of Agriculture. Mr. Nelson W. McLain has been appointed to take charge of the station, and Prof. Riley has instructed him to pay particular attention to these subjects:

To secure the introduction and domestication of such races of bees as are reported to possess desirable traits and characteristics; to prove by experiments their value to agriculturists of the United States, and their adaptation to our climate and honey-producing flora; to make experiments in the crossing and mingling of races, and endeavor to secure the type or types best adapted to the uses of our bee-keepers; to make experiments in the methods of artificial fertilization; to test the various methods of preparing bees for winter; to gather statistics concerning the bee-keeping industry in the United States; to make observations concerning varieties of honey-producing plants for bee-forage; to study the true causes of diseases yet imperfectly understood, and the best methods of preventing or curing them; and to obtain facts as to the capacity of bees to injure fruit.

WILL IT PAY TO FEED BEES DESTITUTE OF STORES?

My black bees have not honey enough to take them to mid-winter, except about three stands. All my Italians, the new swarm or colony, will have to be fed. One colony (new) has not one ounce of honey. Will it pay to feed enough to them, while the weather is warm, to winter? How much sugar to a colony? This season has been very poor for honey here except a week or so during the bloom of basswood. Lots of buckwheat here, but it doesn't furnish honey.

W. S. JONES.

Central Station, W. Va., Sept. 8, 1885.

I suppose, friend J., circumstances will have to decide the matter to a certain extent; but I should say it would most assuredly pay to feed bees; and for myself I would feed them, even if it did not pay—that is, unless I had found by experience that bee-keeping was a much poorer business than any reports we have had yet; at least, I feel sure it will pay in the end instead of letting them starve. You may not get your money back the first season after feeding, but this is true of almost any farm crop. I can not answer the question as to how much sugar per colony, any more than a farmer could tell how much it would cost to feed a cow through the winter; but as a rule we might say from 15 to 20 lbs., if feeding is commenced this month.

WILL THE CLARK SMOKER BURN CHOPPED-UP CORN-COBS?

Please let me know if your Clark smokers will burn corn-cobs that have been ground on a feed-mill, into pieces the size of three or four kernels of corn, and dried in the oven. I think the chaff and

small pieces of cob blown from the large corn-shell-crs would be good fuel, but have never tried it. Corn-cobs prepared as above burn well in the Bing-ham smoker.

GEO. M. THOMSON.

Grand Junction, Ia., Sept. 11, 1885.

The Clark smoker would be a rather poor affair, friend T., if it would not burn such fuel as you mention. Corn-cobs make a large volume of smoke, and for a time it was thought to be the best fuel that could be procured; and the only drawback is, that it contains a much larger quantity of tarry matter than rotten wood, and many have discarded it because it fills up the tubes of the smoker so quickly. I should think that the chaff and small pieces of cob you mention would make splendid fuel.

WHY DO BEES ABSCOND FROM THEIR HIVES?

I should like to ask you concerning some dissatisfaction among my bees. One of my Italian queens came out this spring, carrying with her all the workers that were able to fly, leaving the brood-chamber full of brood, from that hatching, down to eggs, with some little storage. Soon afterward another one of my Italians came out of her own hive, bringing with her all the bees in the hive, and went in the hive the first had left, and stayed till next day, when they came out and settled. I caught the queen and cropped her wings, and put them back in their own hive. She seemed to be very badly dissatisfied, and the bees came out for three or four successive days and would settle, and in a few minutes would go back. On examination I found they had lost their queen, and found they had exhausted their stores. I gave them some stores, after which they went to work and reared a fine queen, as they had a good supply of eggs, and are now doing well. This crazy way of doing puzzled me very much, and I shall be very thankful if you or some of the friends would give me some clew to it and remedy for it. My bees are not gathering much honey yet, on account of too much rain, but they seem to be gaining rapidly.

J. W. SEGLER.

Paris, Texas, July 6, 1885.

Friend S., this matter is fully discussed in the A B C book, under the head of "Absconding Swarms." In your case they absconded because of scanty stores. This they are especially apt to do in the spring. A good many times they go off with a little honey left in the hives, as you mention.

ADULT BEES CAN SECRETE WAX.

Can working bees secrete wax? I see that W. Connelly takes the ground that bees old enough to be workers can make no more wax (page 164). I just feel like saying a word, and will give you a case that I know to be a fact. One hive of bees swarmed, and the swarm was hived in the usual manner. That swarm filled their hive full, and swarmed in just 23 days. As it takes 21 days to hatch a bee from an egg, this last swarm were the same bees as the first swarm, and they had been workers for 20 days. But they filled up the second hive with comb and honey. It took three weeks to fill the last hive, so those bees old enough to be workers did secrete wax, and build comb for six weeks.

E. FRANCE.

Platteville, Wis., Aug. 24, 1885.

Will the friends who claim that old bees can not secrete wax please answer friend F.?

SYRIO-ITALIANS; A WEAK COLONY WITH A LAYING QUEEN AND QUEEN-CELLS.

I have been requeening my apiary this year with Syrio-Italians, raising my queens from my best Syrian stocks; and by keeping down the drones in my Syrians, and allowing the Italians to raise them, I think I shall have most of my queens mated with Italian drones. I like that stock very much. They cap the honey very white, and are ready to go into the sections whenever the honey-flow will warrant them, without the coaxing so often necessary with the Italians. They are quiet to handle, are very good honey-gatherers, and the queens are good layers, and easily seen on the comb.

I had a singular experience with one colony. I removed the queen and made a nucleus with her, in order that the colony might raise queen-cells. Ten days afterward I cut out all the queen-cells and returned the queen to the old colony, and with her a frame of bees with brood and eggs. Some days after I looked into this hive to see that she was all right, when, to my sorrow, I found queen-cells started, and almost ready for capping on the frame returned with the queen. I at once concluded the queen was killed, and looked no further. When those queen-cells were ripe I went to the hive and cut them out; on looking further I found frames of eggs, hatching larvae, more queen-cells, and my queen also. The colony was not strong enough to want to swarm, then why these queen-cells? The queen apparently had not laid any eggs for three or four days after being returned to the hive.

J. SINGLETON.

Brooklyn Village, O., Aug. 21, 1885.

It would seem, friend S., that the bees had forgotten their old queen to such an extent that they kept on with their preparations for rearing a new queen. I have observed the same thing once or twice, and I should consider it a little risky to let a queen loose without caging, after she had been away from the hive for ten days. You will notice, that by the operation you succeeded in getting queen-cells built while the hive had a laying queen. I have also done the same thing under the same circumstances.

A FAIR REPORT FROM TEXAS, ETC.

The honey season of 1885 here in Central Texas has been generally unsatisfactory. My home apiary did very well on horsemint alone; later on it made some honey from honey-dew, and the last of August the upland elms bloomed, but the flow was for only a few days. Bees now are working on goat-weed and broom-weed. By the way, a good plant of broom-weed makes the best brush I have seen for brushing off bees from the combs.

From 100 colonies this season I have taken 1500 lbs. of honey, and left plenty to winter on.

I have never seen any mention of the *Texas Bee-Keeper* in GLEANINGS. It is run by the Common-Sense Bee-Hive Co.

I use only the A. I. Root Simplicity, and in my varied experience I have never found its equal.

WM. WRIGGLESWORTH.

Crawford, Texas, Sept. 16, 1885.

Friend W., I have not mentioned the *Texas Bee-Keeper*, for the very reason you give. The man who has been for several years running the Common-Sense bee-hive has been in such bad repute that I could not consistently say any thing good of him, and

so I said nothing in regard to the publication. If I am any way at fault in the matter, I am glad to be corrected. If the man has turned over a new leaf, we most assuredly bid him God speed.

SOUR HONEY AND MOLDY COMBS; WHAT CAUSED IT?

On the 21st ult. I went some three miles to a friend's to look over his bees and take honey in one of the colonies. The honey not sealed was sour; also the pollen and combs were moldy. The bees seemed lively and healthy. There were eggs, hatched larvae, and sealed brood. The 22d of June there issued a large swarm from the above hive, so there could be no hatching bees at the present writing. Please tell us what to do with them—cut out all the moldy and spoiled combs, or let them alone?

JAMES A. KIME.

Fairfield, Adams Co., Pa., July 25, 1885.

Friend K., I have never in my experience found a case like the one mentioned, where a good colony of bees wouldn't make sour honey sweet, and bring it out all right. I would just let them go ahead, so long as they seem to prosper and do well. Perhaps it might be well to cut out the moldy pollen, although I believe the bees will fix that, if they haven't too much of it on hand at one time.

A BALLED QUEEN LIBERATED BY BEING PLUNGED INTO WATER: MARTINS KILLING BEES.

The queen and bees came Friday evening. I put them in Saturday morning. I looked at them in the evening, and I saw that they didn't like her; three workers were dead. I put them back till the next day noon, and looked again and found her balled. They had cut under to her, so I dropped them into some water and got the queen all right, so I took a cage four inches square and put her back on hatching brood so she would have company. I looked the next day, and found twenty or more young bees with her, so I made a small hole in the comb, set them back, looked in the next morning, found no queen under the cage nor in any other place—no eggs—so I put some eggs in on the 23d. This morning, the 23d, I found four queen-cells started.

I have some as fine Italian bees, I think, as can be found anywhere. I got eight out of nine through the winter. My melon-juice and sugar were all right for wintering. Bees are not doing much just now. I have lots of melons. Come over, and bring Huber and the girls. I am getting 20 cents for my honey. I have 17 colonies now, 2 Italians. I lost 4 young Italian queens this summer, and 2 blacks.

The bee-martin is bad here. I have been using my gun. I didn't think they did any harm till I saw them catching drones, and I think they got the queens also.

J. AVERY.

Michigantown, Ind., Aug. 23, 1885.

DO NOT SEND HONEY TO THE CITY; CREATE A HOME MARKET.

I want to say a few words to the brethren about selling honey. It is certainly a bad plan to send your honey to the city. We want to get the people to eat honey, then we shall have a market for it. As it now is, not one family in a hundred buys honey for family use, and only a very few keep it for visitors. Now, are we likely to get them to eating honey by sending it to Chicago, St. Louis, or any other city, to be piled up in the commission room

and reported dull sale, or no sale at all? Why should it sell? What's to make it sell? Too much honey for the city, and no orders from storekeepers in the country, for fear it will be smashed up on the road. As a consequence, honey is a stranger to most folks. Now, in a few words I should like to encourage my bee-keeping friends to sell their honey at home as much as possible; for if we don't, worse times await us. A. LINDLEY, 42—98.

New Providence, Iowa.

QUESTIONS IN REGARD TO PREPARATION FOR WINTER.

How much sugar would you put to a quart of water, if you feed this month?

Do you think it best to feed at present, or wait until packed for winter?

I agree with Dr. Morrison, about this being a very bad year for bees in Pennsylvania. I have taken 800 lbs. of honey from 25 colonies. I know that you were very successful last winter, and that is the reason I send to you.

I have been using granulated sugar from Franklin Refinery, Philadelphia; and when the syrup is left in a vessel, a blue substance settles like indigo. It does not poison the bees.

Dilworthtown, Pa.

HENRY P. FAUCETT.

The amount of sugar for a gallon, as given in the A B C, is 25 lbs.—I would commence feeding at once; and as we use chaff hives altogether for wintering, our bees are already packed, except putting on top cushions.—I have never seen the blue substance you mention, in a syrup made of granulated sugar. I presume it is something that got in by accident during the refining process, and is probably in no way deleterious.

AN ENCOURAGING REPORT FROM FRIEND HEDDON.

As you will see by the inclosed railroad receipt, I have shipped you by freight a 50 and 100 lb. keg of basswood honey, such as always brings orders for more. If you want any more of it, order at any time, and place to my credit. Accept my thanks for your very kind and liberal notice, which I appreciate. My ten tons of honey will all be gone in sixty days, I think.

After losing three-fourths of 476 colonies, I was called rash for investing \$700 in bees last spring; but over \$1600 worth of honey, and 450 colonies, has rewarded my courage.

JAMES HEDDON.

Dowagiac, Mich., Sept. 21, 1885.

If I am correct, the above was not intended for publication; but I have taken the liberty of using it, and it is just the kind of reports we want. Tell us in a few words, friends, what you have to encourage you in continuing to be bee-keepers.

IDENTIFYING ROBBERS WITH WHEAT FLOUR.

I have a few questions to ask. I am a beginner. I had a misfortune last Sunday. I was away from home, and when I got home my folks told me that there were some robber-bees at our hives. I went into the apiary, and found one swarm flying very fast. I went across the road, and found one of my neighbor's swarms flying very fast also. He denied that they were robbing. I went back and sprinkled flour on them, and they went into his hive, so I shut mine up till next day noon. I opened them a little. I had my hive open half an hour, then his rushed in and began carrying out the honey. I shut my

hive, then they clustered again on the opposite side. I took a bunch of straw and burned them. Did I take the right way to get rid of them? If not, please tell me what I should have done.

Indian River, N. Y.

MICHAEL ZEHR.

Friend Z., your plan of proving that the robber-bees belonged to your neighbor's hives is a good one, and it was quite right and proper to give him proof that they were his bees; but you had no more right to kill them than you have to kill your neighbor's cow or horse if it should come into your doorway or garden. There are many easier ways of stopping robbing than by killing the robbers. Any of our text-books on bee culture would direct you how to manage. I should say that neither your neighbor nor his bees were any way at fault—that the fault was yours in permitting a hive of bees to remain in condition where it would not repel robbers. They were probably queenless, or the entrance was much too large for the number of bees in the hive, or something of that sort.

MRS. CHADDOCK'S LETTER.

She Tells us How to Make Good Mucilage at an Expense of Only Five Cents for Half a Gallon.

SHE ALSO TELLS US SOMETHING ABOUT OUR GOOD FRIEND E. A. GASTMAN, OF DECATUR, ILLS.

MR. ROOT:—You say in your price list that you do not see how people can afford to make mucilage and sell it for five cents a bottle, and throw in a brush. I think I can tell you how. This summer I attended the teachers' institute in Lewistown, Ill., and our instructor in the reading-classes was Mr. E. A. Gastman, of Decatur, Ill. He has been for 25 years principal of the city schools in Decatur. He is also a practical bee-keeper, having at the present time some 75 colonies in the city. Mr. Gastman is a funny man. I have known men before who could be funny for an hour or two, but never before saw one who could keep on saying funny things for two whole weeks, and not run out. One of the things he said was, that "some people are not all alike." He writes bee-articles for the *Illinois State Journal*. Perhaps you know all about him.

Well, one day he told us how to make mucilage, and we all wrote it down in our scratch-books. He said we could make half a gallon for five cents. Take five cents' worth of gum tragacanth, add warm water to it, a little at a time, and let it swell. Add a little pulverized alum, to keep it from molding. If wanted dry on paper, like postage-stamps, add a little glue; and if wanted to paste labels on specimens—stones, for instance—add a little sugar.

MAHALA B. CHADDOCK.

Vermont, Ill., Sept. 18, 1885.

Thanks, Mrs. C., for your recipe. I think it is exactly the same that I used years ago in preparing objects for the microscope. If I remember correctly, it is apt to sour unless something is put in to prevent. May be the alum would do that; if not, I would add a little carbolic acid. Gum tragacanth needs to be soaked quite a while before it forms a mucilage.

REPORTS DISCOURAGING.

REPORT OF THE HONEY SEASON IN WESTERN NORTH CAROLINA.

WE are one of your A B C scholars, and saw a letter in last GLEANINGS from Henry Stewart, which rather goes back on us natives of the mountains of Western North Carolina, about energy, and making this a great land for honey. We have a great many honey-plants here, to be sure; but the honey is not in them by the quantity, or the old blacks can not get at it. My father has had from 25 to 60 stands for the last 15 years, and I do not remember that he ever got more than 50 lbs. surplus any season from his best stand, and I think 75 lbs. is the best I have heard of from any one stand in this county. Now, the point Mr. Stewart writes from is about 50 or 60 miles west of here, but about the same kind of a country as this. It is on the same range of the Blue Ridge. Now, you can see from my report how honey has flowed here this year. I have invested about \$50.00 in improved bee-fixtures—every thing that would help them out that I saw in your catalogue—your hive, frames, section box, foundation, and about every thing that would be of any service to them, and have not got 25 lbs. of surplus honey, and some of my bees are without honey now, and will have to be fed from this till spring, or starve. Some few may have enough to carry them through till spring. I know of two other lots, of about 15 hives each, that have not got 50 lbs. of surplus each this year. I commenced in the spring with sixteen; lost one and doubled back to 12, and bought one four-frame nucleus. Now all that I have for my investment is three stands of Italians from my four-frame nucleus, and I have raised and introduced 8 Italian queens, and think I shall get three more, and have all in Simplicity hives but four. But still I will not go into Blasted Hopes yet, as this has been one of the worst seasons for honey that I ever have seen in this country. I do not think there is one-tenth the honey made here there is in a fair season. I have been in our town, Asheville, from once to five times every week for the last four months, and have heard of but one lot of honey offered for sale there. I have never seen my bees come in with large loads at any time, except when locust and sourwood were in bloom, and but for a little while then. I can not see the cause for honey being so scarce this year in this country; but it is not in the bloom; or if it is, the bees did not get it out.

R. L. PATTON.

Best, Buncombe Co., N. C., Sept. 17, 1885.

THE NAMELESS BEE-DISEASE: A RATHER DISCOURAGING REPORT FROM AN OLD FRIEND.

Inclosed please find 75 cts. for GLEANINGS for nine months. Don't send it any more, as I am not able to take it any longer. Put me in Blasted Hopes again. Three years ago I got from 70 colonies over 11,000 lbs. of honey; two years ago from 97 colonies, 5000 lbs.; last year, 1100 lbs. from 99 colonies. This year from 160 colonies, 2000 lbs. I gave all of my time to my bees, and am most dreadfully discouraged. I have had, this entire season, black shiny bees carried out, seemingly in distress. They could not fly, or scarcely fly; would go back, and be again carried out. The trouble extended to a large

part of my bees. Some dwindled while others kept up. As the queen was very prolific, the trouble is nearly stopped, save one hive which is dragging the shiny fellows out. I am greatly alarmed; for if winter weather should assist the trouble, I believe all the bees would go.

One man here, out of 215 colonies lost all but 19 last winter, and his bees were afflicted the same; but he thought the black shiny bees were old and dying bees; but I know better, as it does attack young bees also. I know whereof I speak. The brood is all right in the comb. The California friends called your attention to the trouble, but you passed it lightly, referring to the A B C book. I have lost bushels of bees during the summer, in the way above described.

A. L. KLAR.

Pana, Ill., Sept. 21, 1885.

I beg pardon, friend K., but I did not mean to pass the matter over lightly, as you term it. So far as I know, nothing has been brought to light in regard to the malady, further than is given in the A B C book, and it seems hardly worth while to repeat what I have given there. Have you and your friends tried a new strain of blood in your apiaries—that is, giving a new queen, and rearing queens from her? I shall be glad of any facts in the matter that will help us to manage the trouble.

This has been a very poor season for bees and honey. From ninety hives, spring count, in good condition, I have taken only about 1200 lbs. of comb honey, and shall perhaps return some of it, as some hives will probably be too light for winter, without help. Honey is selling here in comb for 10 and 13 cts. per lb. California honey injures our market.

MRS. R. A. NORTH.

Shellsburg, Iowa, Aug. 29, 1885.

HUMBAGES AND SWINDLES PERTAINING TO BEE CULTURE.

MORE ABOUT MRS. COTTON.

AS quite a number of my friends in this vicinity have been humbugged and defrauded by purchasing hives and bees of the woman named below, I send you the inclosed slip, to keep her methods before the public.

Andover, Mass., Sept. 14, 1885. L. H. SHELDON.

Below we give the newspaper item which our friend sends us:

I read in the *Tribune* a quoted paragraph about Lizzie E. Cotton, saying that she took \$20 from a poor one-armed woman and sent in return "part of a hive containing few bees and no queen." She served us precisely the same way, and we threatened to sue her for damages, but could not spend time to follow the matter up. But can not this contemptible fraud be stopped? Her method is to work in certain sections until too hot for her, then steal away to another, answer no letters, but ply her swindle as before.—H. M. Holmes, Orleans, Mass.

I presume friend Sheldon would furnish the details of the way in which these friends have been humbugged, if it were necessary; but the matter has been gone over so many times at length, that it will hardly be advisable to repeat it in detail. Newspaper editors who are receiving and inserting her advertisement should look into the matter.

DOES IT HURT A QUEEN TO BE CRIPPLED IN ONE OF HER LEGS, ETC.?

ALSO SOMETHING ABOUT MAKING POSITIVE STATEMENTS WITHOUT POSITIVE KNOWLEDGE.

I RECEIVED from you, Sept. 2d, a "select tested" Italian queen, and Sept. 4th I received an untested queen. The select tested queen I introduced to a colony that had been queenless 9 days. Having removed the queen 9 days previous to the day when I received the queen, I removed the queen-cells which they had built, and caged the queen on a comb over sealed honey. After a period of 24 hours I lifted the comb from the hive and cut a hole from the opposite side of the comb through into the cage, leaving the loose piece of honey for the bees to remove, and liberate the queen after the comb was returned to the hive. After a lapse of two days I again lifted the comb from the hive, to be sure that the queen was liberated. I found that she had commenced laying, as I found eggs in the comb. I of course concluded that every thing was all right, removed the cage, and closed the hive. Four or five days ago I went to see how my queen was getting along. I found her, and she is a very nice looking queen, but I was grieved to see that one of her legs was useless. Although she continued laying while I held the comb in my hands, it made me feel very sad to see her dragging her poor shriveled leg over the comb. I can't see why the bees should have stung the queen I prized so highly, when I had the conditions favorable, as I supposed, for her kind reception. The queen still continues laying, though not nearly as fast as the dollar queen. I wonder if the crippled queen will probably live; and if so, if it would probably render her unfit for a breeding queen. I can't answer these questions, as I never had such experience before.

Last year I was very unfortunate in buying queens. I mailed a queen-breeder \$5.00 at different times, \$2.00 of which he said he never received. Of course, I believed him, but I thought he was very unkind, after I wrote and told him I had sent it, when he replied that he thought I was mistaken, as he did not believe it would have been lost or stolen. If I had expressed, or implied doubt, in my statement, I should not have felt wounded. I am well aware that some people will make a positive statement, without possessing a positive knowledge of the subject they are talking about. He referred me to that class of individuals, in a way to include me with them.

WATSON ALLEN.

Bernardsville, N. J., Sept. 21, 1885.

Friend A., there have been frequent reports of queens that, when received and introduced, were found to be crippled in the way you mention, or in a similar way; and sometimes we find queens in our own apiary with one or more of their legs useless. We don't know how this comes about; but as it more frequently happens with queens that have been introduced, I have had an opinion that it was caused by pulling their legs while they were balled, at the time of introducing. The main question is, of course, "Does it damage them?" I have been in the habit of writing to customers when such complaints have been made, to let the queens remain in the hive, and note whether they were as prolific as other queens. In the majority of cases the reports seem to be that

they were just as good, to all appearances. In your case, it would seem as if she were not as good, although it does not necessarily follow, after all, for queens differ greatly in fertility. Still a select tested queen ought to be as prolific as almost any dollar queen, for none are ever sent out as select tested, unless they are good layers.

Now in regard to your last paragraph. I do think it is one of the most unkind things, to make positive statements without positive knowledge, especially where these statements reflect on the honesty of somebody else. A few days ago, in corresponding in regard to some money which had been sent us, but which we never received, the writer said he had sent money by mail thousands of times, and had never lost a copper, and he believed that the money he had sent this time had reached our office, because it seemed to him unreasonable that money should go all right so many times, and then one letter be lost. What absurd logic! The man was a postmaster too. Had he been conversant with his own business he must have known that mail robberies are occurring every now and then. A few weeks ago, quite a quantity of old letters were sent to us by the department. A mail-bag had been robbed, and rifled of every thing that was valuable, and the rest thrown away. The department found these after a time, and took great pains to place them in our hands. It is not only unchristianlike, but I should say that it was extremely ungentlemanly, for any one to say he does not believe a letter was ever sent, from the simple fact that it was never received. People who send out comparatively few letters may not meet with a loss for years; but, does that give them any right to say they do not believe losses occur at all? In our large business, comprising oftentimes several hundreds of letters a day, both going out and coming in, we have an opportunity of knowing how frequently such things do occur; and while I am on the subject, I might mention that the cases where people think they have sent money, but have forgotten to do so, are much more frequent than the actual losses. In fact, this sort of thing occurs so often that we have had postal cards printed like the following, to send out to that class of customers. Of course, the blanks are to be filled for meeting any case in question, and a great many times some portions of the print have to be crossed out, especially the postscript. Here is the blank, such as we put on a postal:

MEDINA, O., 188
MR
YOURS OF is just this minute opened, and both letter and envelope are in my hands. You say you have inclosed but there is positively only
viz:
The envelope was closely sealed, and bears no trace of having been opened. The inside of the envelope contains nothing, and none of its contents have been dropped. In our business we open several hundred letters a day, and it is not a very uncommon thing that the writer has omitted to put in all he intended to inclose. We would like to have you write at once whether or not you can explain the above shortage. Trusting that it was only an omission on your part, we remain Yours Respectfully,
A. I. Root, Per "Ida," Clerk.
P. S.—As you may be in immediate want of the goods, we have concluded to forward them right along, to save you delay.
A. I. ROOT.

You will notice the expression, "Both letter and envelope are in my hands." The

clerk who is intrusted with this very important post always fills out the blanks while she is holding the letter and money in her left hand. This, you will see, precludes the possibility of a mistake. In the majority of cases the writer of the letter replies, on receipt of the above printed postal, that the letter was sent to the postoffice by mistake, before the money was put in, or something of that sort. But sometimes it is impossible to get any trace or clew as to where the money did go. Do you wish to know how often we have occasion to use these printed cards? Well, I should say usually once or twice a week, and during the busy season sometimes as often as two or three times a day are needed. It illustrates the hasty and loose way in which many of the brethren do business. If anybody wants further proof of the carelessness of letter-writers, he should examine the reports from the Dead-Letter Office, which are sent out at the close of each year. Some of the friends have been so unkind as to throw out insinuations regarding the integrity of our clerks. Let me tell you, friends, that all these important positions are filled only by those who have, by long years of faithful work, fully demonstrated their fitness for such positions. Our books and mails and money matters are almost all handled by exceedingly careful, faithful, and intelligent women.

OHIO BEE-KEEPERS ON WINTERING.

FRIEND CLARKE'S COMMENTS ON WHAT WAS SAID AND DONE.

GLEANINGS has made a "new departure" in publishing the proceedings of the Ohio State Bee-keepers' Association, which I have read with much interest, especially the part relating to wintering. Some very suggestive ideas were thrown out on that subject, which I feel moved to discuss a little.

PROPER SIZE OF A WINTER COLONY.

Dr. Besse and Mrs. Culp expressed themselves as averse to very populous colonies at the beginning of winter. I think they are right. Father Langstroth's maxim, "Keep all colonies strong," is a good one for the working season, but I think it is often the case that they are stronger than is necessary or desirable in the fall of the year. A hive, as well as a city, may be overcrowded. I remember, that in the early days of the North-American Beekeepers' Association, when friend Hosmer, of Minnesota, used to be a prominent figure among us (what has become of him?) he astonished us on one occasion by the views he enunciated on this point. He said it is all nonsense to be too humane to kill bees. It is no more cruel to kill old bees than it is to shoot old horses. For his part, he did not want more than about a pint of bees to the hive, when he fixed things up for winter. If a hive were too populous he shook part of the bees on to the ground. It was mostly old bees that fell, and they would die before spring any way. He did not want his hives cluttered up with a lot of dead bees. Wintering bees is like garnering seed-grain for next year's crop; all you need is a good start in the spring. My experience last winter convinced me that colonies of small size will do well, if properly cared for.

Why should bees be permitted to outlive their usefulness? Is it any more barbarous to get rid of old bees than it is to dispatch superfluous drones, or massacre the whole of them when their functions are over for the season? During the working season, bees are incessantly active, and wear themselves out very quickly. It is doubtful whether any that have "borne the heat and burden of the day" survive until the following spring, and I have come to think that only old bees are tempted to take flight in pleasant winter weather. Their instinct teaches them to leave the hive; they enjoy a final flight; like Moses they have their Pisgah, disappear, and "no man knoweth their grave."

THE WINTER CLUSTER.

President Root remarked, that a large colony of bees will contract to the size of a popcorn ball, and winter well. In a back number of GLEANINGS the editor mentioned more in detail a case in which a whole colony was compressed into a ball about the size of an average "Northern Spy" apple, but spread out so as to cover the frames. This is probably the most favorable shape for them to hibernate in. But I do not see how they can take that shape as usually put up for winter. I am fixing my stocks in a way to admit of their making a tight ball of themselves. I am preparing honey-boards on the principle of "Hill's device," using, for the center, sections of cave-troughing cut out of 4 x 4 scantling (see figure).



The gabled part of the honey-board crosses the middle of the frames at right angles. This gives the bees access to all the frames, and they have the warmest, snugest place in the whole hive in which to hug one another when they go off into their winter sleep. There is room for a cluster three inches in diameter; and if they make it in the shape of a "roly-poly" pudding it will hold a lot of bees.

VENTILATION.

Let me shake hands with my old friend A. Benedict, whose tall figure and gray head used to adorn our conventions in "the days of yore." I am glad he is "still to the fore" as a bee-keeper. There is a great deal in his remark, "Bees need more ventilation in winter than in summer." Turn over this idea in your mind for a few minutes. Queer, isn't it, that bees should want more air in winter than in summer? It is not so with human beings. In summer we throw open our doors and windows; but in winter we keep them carefully closed. Bee life assumes two stages. In summer, activity; in winter, repose. In summer, quick wear and tear; in winter, careful hoarding up of the vital forces. Human sleep in winter may illustrate the point. We sleep in much colder apartments than we could occupy through the day. When I was a boy I used to go from a blazing fire and cosy living-room to a cold garret where I could see the stars, and the snow would sometimes drift on to the bed-clothes, but I "slept like a top," as the saying is. I think bees will "sleep like a top" too, if they have a uniform supply of pure still air.

The president responded to Mr. Benedict's remark by saying, "Our practice is to leave the entrance open full width all winter." This had reference, no doubt, to chaff-packed hives. Well, I believe the usual entrances will give bees air enough if they are kept "open full width all winter." But they are liable to become partially or wholly closed.

When this is the case, and the air supply is diminished or cut off, the bees become uncomfortable and uneasy, unlock the cluster, and wander around in search of air. I do not think a horizontal air-shaft so good as a perpendicular one for maintaining a constant change in the air. Nature's mode of purifying the air is by vertical currents that, like an endless chain, move continually. In a bee-hive, with all upward ventilation closed, the air is purified by a downward and upward action that goes on slowly but surely all the time. Is it wise to trust to a horizontal passage which is liable to obstruction or complete stoppage, both from without and within? I think not. "Cyula Linswik" and her sister secure ventilation by daily seeing that these horizontal passages are clear. That is considerable trouble in an apiary of any size. Moreover, scraping the bottom-board every day with a bit of hoop iron disturbs the bees, who do best when kept in absolute quiet. Why not have a perpendicular air-shaft through the bottom-board? My plan of removing the bottom-board and substituting a hopper is perfect, because all dead bees, dry faeces (if they are dry faeces, as I believe), and all debris, fall out of the hive and leave it absolutely clean, while the air-supply is uniform and constant. I do not need to go near my bees from November to April, or to wake them up at any time by a rude scratching on the bottom-board. I believe a two-inch auger-hole through the bottom-board will answer well, but the hive must be raised at least a foot from the ground, or you make a door-way for mice. To tack wire gauze over the auger-hole is to nullify it altogether, because it will soon be stopped with dead bees and the debris that falls from the cluster. I am putting auger-holes in some bottom-boards only by way of experiment, and all my hives are from 18 inches to 2 feet above the ground.

CELLAR WINTERING.

One of the most serious objections to cellar wintering is that, when this is practiced, old bees usually die in the hive. The cellar is dark; and an expiring bee, like an expiring human being, seeks the light,—the former literally, the latter figuratively. Very few bees die inside the hive when wintered out of doors. In the cellar, a lot of dead bees on the bottom-board is likely, if not certain, to cause disease. Another objection to cellar wintering is the difficulty of replacing each hive on its own stand, and I, for one, believe this to be necessary, to prevent confusion. I have no doubt that spring dwindling is partly caused by spring wandering.

SUCCESSFUL WINTERING.

I do not call it successful wintering, merely to secure the survival of a colony. I passed one winter in Manitoba, and managed to survive, but got a rheumatism that has been the plague of my life for two years. I don't consider that I wintered well, though I lived through it. I want my bees to winter so as to come out in spring with clean combs, and brood in all stages, after consuming the minimum if honey. If I can get them to hibernate, they will do this every time. Not that I ever expect to winter bees absolutely without loss. There are circumstances we can not control. I have got one or two stocks I do not expect to winter. For some reason or other the queens stopped breeding early, and even now the stocks are dwindling, with plenty of stores on hand. Every day I notice a few bees coming out and taking their last flight. They fly feebly, make a few circles in the air, then fall to

the ground, crawl about for a little while, and finally give up the ghost. A small percentage of loss must be expected. It is so in all business, and bee-keeping is no exception to the general rule. But a colony that goes into winter quarters in a really normal condition ought to be so managed as to come out all right in spring and will be, when we find out *how to do it*. I think we are on the verge of the discovery, if, indeed, it be not already made. Another spring, I firmly believe, will settle the problem for all time. Wm. F. CLARKE.

Guelph, Ont., Can., Sept. 23, 1885.

SAWS THAT NEED NO FILING.

ANOTHER STEP IN MECHANICAL PROGRESS.

THE single item of filing saws has long been well understood to be an item of no small moment in our mechanical work, and many inventors have studied with a view of making some automatic machine that would take the place of the slow and expensive operation of filing by hand. Not only is the operation slow and expensive, but files are expensive. One trouble that stands in the way is, that no common day laborer could be expected to keep a machine for filing his saw, even if one were invented. Well, the Miller's Falls Co., of 74 Chambers Street, N. Y., have made a start in the business by making tempered saw-blades that are to be used until they are dull, and then thrown away, and a new blade put in. As these blades are never to be touched with a file, they are tempered much harder than any ordinary saw-blade. Below we give cuts of two different saws, arranged to work on this plan.



The first is a meat-saw, such as butchers use. The second is a hack-saw, similar to those we have for some time sold and used for sawing metals. I took one of the hack-saws that were sent me for trial, and gave it to our machinist. I told him the manufacturers guaranteed each saw to cut off a bar of half-inch iron 80 times. He tried it on a piece of inch shafting. It cut it off almost as if it were a hoe or fork handle. After the first cut he came to me saying:

"Mr. Root, how much is this tool worth?"

I told him the price was \$1.25.

He replied at once, "Here is your money. And now I want it understood that this tool is mine."

Do you want to know what the saws cost? The blades only, for the hack-saw, are 5 cts. each, or 50 cents per dozen. If wanted by mail, add 3 cts. per dozen for postage. The blades for the meat-saw are 10 cts. each, or \$1.00 per dozen. If wanted by mail, add 10

cts. per dozen for postage. The meat-saw frame alone is worth \$1.50. It is made of the best quality of polished steel, and heavily nickel-plated. The hack-saw frame alone, made in the same way, is worth 75 cts. The hack-saw frame can be sent by mail for 15 cts. extra; the meat-saw frame is not mailable. The manufacturers also make blades for wood-scroll sawing, at 10 cts. per dozen, the same price as those sold on our ten-cent counter.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,

EDITOR AND PUBLISHER,

MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, OCT. 1, 1885.

He knoweth the way that I take: when he hath tried me, I shall come forth as gold. — Job 23: 10.

We have to-day, Sept. 29, 6540 subscribers.

We expect shortly to have a new dress for the front of the juvenile department.

A VISIT TO PETER HENDERSON.

As soon as this present number is winging its way to your homes, I shall, Providence permitting, be on my way to a visit to Peter Henderson, the great market gardener of the world. Notes by the way will be found in our next issue.

HOW LATE CAN WE SHIP QUEENS?

The above question is often asked by somebody who has a good strong colony, found to be queenless late in the season. We expect to ship queens, not only all through this month, but next also, clear into December, unless the weather is unusually severe.

THE ILLUSTRATED BIENZENZEITUNG.

We have before mentioned the excellent quality of the engravings in the above journal, and the issue for September gives us some that it seems to me are ahead of any thing we have seen yet. To cap the climax, a frontispiece contains, not an engraving, but an excellent photograph of Dr. Dzierzon himself.

SELLING BEES IN THE FALL.

If it were not for the wintering troubles, the fall would be an excellent time to buy and sell bees; and where one feels sure he can winter them safely, it is an excellent time to buy bees as it is. See our advertising columns. You will notice that it is a rather poor time to sell, by the extremely low prices at which bees are offered.

PREPARING BEES FOR WINTER.

This matter has been gone over so thoroughly every fall for years past, it hardly seems necessary to repeat it all again. Our text-books give very full instructions, and the matter has been discussed pretty fully almost every month since the disasters of last winter. See that each colony has lots of bees,

plenty of good wholesome food, some sort of protection at the sides, with loose chaff or leaves above the cluster, and a good wide entrance that lets in the air, but excludes mice, and I think you will be all right.

MICROSCOPIC SLIDES OF THE BEE.

We have received from W. M. McAllister, Philadelphia, a full series of microscopic specimens of the bee. They are some of the finest we have ever seen, and comprise a careful selection of all the different parts of the bee, carefully mounted. Besides this, some of the specimens are injected; that is, a red fluid is pumped into some of the delicate tissues, in order that the fine markings and the structure may be more easily seen. Such objects ordinarily sell for from 25 to 50 cts. each; but we can furnish a whole dozen, put up in a neat pasteboard box, for the low price of \$1.50. These slides are $2\frac{3}{4} \times \frac{1}{4}$ inches, and are just the thing for the small microscopes we advertise. Ernest has tested them with his large instrument, and knows they are good.

ARTIFICIAL PASTURAGE.

In localities not too far north, seven-top turnip may now be put in the ground; but unless the plants have time to make a good stout root, the frosts of winter will be likely to heave them out. Raspberry-plants may be set out now; in fact, we have been setting out plants of the Cuthbert for two or three weeks past. Alsike and sweet clover may be sown in the fall, in some localities; but perhaps the safer way will be to put in the seed in the spring. Winter rape can probably be sown about the time of winter wheat, but as yet we know little about it. Can any of our readers give us any information? We tried some a year or two ago, but it was so near like our seven-top turnip that we found it difficult to tell "which from t'other."

MANUFACTURED COMB HONEY.

While riding in a crowded street-car from the College Grounds in Columbus to the Fair Grounds, the conversation started on adulterated honey, and one of the "knowing ones" commenced to tell the old story of how they manufactured the comb out of paraffine and the contents out of glucose, etc. While I was waiting for a good chance to put in a word, Ernest and George Gray took the gentleman up. He was very positive until he found whom he got hold of; but the boys backed him down so quickly that he very soon acknowledged that he did not just know where the honey was made, but that he had heard about it. One of the reasons which he gave for declaring the honey was bogus, was that it was offered at 15 cts. per lb.; but when the boys closed down on him and offered to furnish him 5 lbs. or even less, at only 10 cts. a pound, and 50 lbs. or more at 9 cts., and honey, too, that would stand the test of analysis, quite a number of bystanders put in and wanted to know where we lived, that they might send us some orders. You see, the point is, friends, the world is not half posted. They have all read the sensational items in the papers, and have honestly decided in their own minds that no genuine honey is to be found in the markets, either comb or liquid, and so we bee-keepers have to stand the consequences. Don't let us be disheartened, however. We have the promise, that he that is patient and endureth to the end, shall eventually triumph. Meanwhile it is the duty of every one of us to do all we can to disabuse their minds in this matter.

QUEENS BY RETURN MAIL.

THE COMING BEE.

I believe that, with most all well-experienced beekeepers, it is admitted that, to take any one race of bees in its purity, the Italians are preferable to all others; and yet it is also admitted, that the Cyprians, Holy-Lands, and Carniolans all have good traits not found in the Italians. My efforts have been to combine the good traits of all other new races with the Italians, and yet retain all the good traits of the Italians, and I am happy to say that I have succeeded, even beyond my most sanguine expectation.

HOW I DID IT.

In the first place, the Italians, being the best, I took them as the basis. From a fine imported Italian queen I raised a number of young queens; and before these were ready to become mated I contracted the entrance of all hives except the Holy-Land bees, so as to not permit the drones to fly. Well, as there was quite a number of Holy-Land drones I succeeded in having some of these young queens mated with them. Next I selected two of the queens thus mated (which were very large), and from these two another lot of queens was raised; and by the same method I obtained some very fine queens mated with Cyprian drones, and these are the queens I use to raise from. Now, take notice; as I allow no drones to fly except Italian, and as all bees near me are Italians, all queens raised from these crosses will be mated with Italian drones. Such queens produce fine, large, prolific, and energetic workers.

If you would like to see some live samples of workers, send two letter-stamps and I will mail you a dozen or so.

Will send queens raised from imported stock, if preferred. The Carniolan queens I raise will be pure Carniolans, and mated with Italian drones. All races will be sold at the same price.

	Oct.	Nov.
Single queens, untested, but laying, each,	\$1 00	\$1 00
Six or more, each,	90	90
Single queen, tested	1 50	1 50
Six or more, each,	1 40	1 40

CHAS. KINGSLEY,

19d **Benton, Bossier Co., Louisiana.**

Oldest Bee Paper in America—Established in 1861.

AMERICAN BEE JOURNAL,

16 page Weekly—\$1.00 a year.

Sample Free. **THOMAS G. NEWMAN & SON,**
925 West Madison Street, Chicago, Ill.

FOR SALE,

**A SECOND-HAND TWO-HORSE-POWER
EUREKA ENGINE AND BOILER.**

The above engine has been in use about five years; but Mr. A. F. Stauffer, of Sterling, Ill., of whom we purchased it, writes in regard to it as follows:

I guarantee the engine to be in good working shape, as good as it ever was. I had boiler examined last spring by a steam-fitter, and he pronounced it as good as new. I always used soft water. I am furnishing my shop with new machinery and am anxious to sell or exchange it. I have to get more machinery, and my two-horse power is too light.

Sterling, Ill. A. F. STAUFFER.

We will sell the above engine, to be taken at Sterling, Ill., for an even \$100, and we will put our guarantee on top of that of Friend S. We obtained it of him in exchange for some new machinery, he, of course, putting in a larger engine and boiler.

Also one second-hand **Pony Planer** for sale. This planer is one that we used in our factory for planing all our basswood plank, heavy lumber, etc., and was set aside only because of the increase of our business. The plane is 24 inches in width, and such a machine would cost new \$140 net cash. It is all in good trim, and ready for work, with an extra pair of new knives, and it will be sold for just half price, or \$70.00.

A. I. ROOT, Medina, Ohio.

85 COLONIES OF BEES FOR SALE

Syrio-Italians, Red-Clover Italians, and Hybrids, all on L. frames, mostly wired. Wishing to go south for my health, I offer the above in lots of five or more at \$5.00 per colony, or \$360 for the lot, if taken soon, together with extractor, section cases, extra frames, and fixtures. All requested from the best strains this year.

J. SINGLETON,
19d **34 Public Square, Cleveland, O.**

Wanted. To buy a small farm and apiary. Give terms of sale, honey resources, distance to school and church. California given preference.
E. S. ARWINE,
19d **Patterson, Waller Co., Texas.**

For Sale. Eight Colonies of Bees in 1½-story Simplicity hives; granulated sugar stores, all complete for wintering, at \$8.00 per colony.
R. B. BONEAR,
19d **Cherry Ridge, Wayne Co., Pa.**

For Christmas. 50 SCROLL-SAW DESIGNS for working brackets, easels, etc., 10c. **J. L. HYDE, POMFRET LANDING, CONN.** 1911db

JOB LOT OF WIRE CLOTH

AT GREATLY REDUCED PRICES.

SECOND QUALITY WIRE CLOTH AT 1½ CTS. PER SQUARE FT.

SOME OF THE USES TO WHICH THIS WIRE CLOTH CAN BE APPLIED.

This wire cloth is second quality. It will answer nicely for covering bee-hives and windows, to keep out flies; for covering bee-hives and cages for shipping bees, making sieves for sifting seeds, etc.
Number of Square Feet contained in each Roll Respectively.

Inches Wide.	No. of Rolls.	
10	3	rolls of 75, 72 s. f.
12	2	rolls, 100 s. f. each.
20	3	rolls of 166, 1 s. f. each
22	4	rolls of 181, 1 of 160 s. f.
24	6	rolls of 200, 1 of 180, and 1 of 120 s. f.
36	1	roll of 217, 38 of 216, 2 of 195, 1 of 156 1 of 152, 2 of 215, 1 of 210 s. f.
38	16	rolls of 233, and 2 of 234, s. f.
34	7	5 rolls of 281 s. f.
36	37	28 rolls of 316, 3 of 285, 2 of 317, 1 each of 190, 633, 136, and 215 s. f.
42	1	roll of 245 s. f.
44	2	1 roll of 366, 1 of 348 s. f.
46	1	roll of 352 s. f.
48	12	10 rolls of 400, 1 of 100, 1 of 50 s. f.

FIRST QUALITY WIRE CLOTH AT 1½ CTS. PER SQUARE FT.

The following is first quality, and is worth 1½ cts. per square foot. It can be used for any purpose for which wire cloth is ordinarily used; and even at 1½ cts. per sq. ft. it is far below the prices usually charged at hardware and furnishing stores, as you will ascertain by making inquiry. We were able to secure this very low price by buying a quantity of over one thousand dollars' worth.

Inches Wide.	No. of Rolls.	
20	1	roll of 155 s. f.
22	1	roll each of 88, 143, 92 s. f.
24	43	rolls of 200 sq. ft. each; 1 each of 80, 95, 120, 168, 190, 280, 150, 140 sq. ft.
26	38	rolls of 216 sq. ft. each; 1 each of 195, 195, 500, 500, 201, 227, 201, 209 sq. ft.
28	76	rolls of 233, 6 of 224, 3 of 219, 8 of 222, 7 of 224, 2 of 219, 1 of 117 sq. ft.; 1 each of 70, 210, 245, 257, 240, 215, 110 93, 82 sq. ft.
30	36	rolls of 250 sq. ft.; 1 each of 82, 137, 115, 117, 125, 125, 220, 225, 227, 237, 235, 275, 340, 157 sq. ft.
32	14	of 206, 7 of 256, 2 of 253 square ft.; 1 each of 233, 254, 147, sq. ft.
34	31	rolls of 283 sq. ft. each; 1 each of 62, 113, 198 sq. ft.
36	22	rolls of 300 sq. ft. each; 2 of 72, 1 each of 238, 150, 279, 285 sq. ft.
38	1	roll each of 300 and 316 sq. ft.
40	1	roll of 253 square feet.
42	1	roll of 350 square feet.
46	1	roll of 192 square feet.

A. I. ROOT, Medina, Ohio.

I HAVE SOME FINE

POLAND CHINA PIGS

VERY CHEAP. ADDRESS

N. A. KNAPP, Rochester, Lorain Co., O.

DADANT'S FOUNDATION FACTORY, Wholesale and retail. See advertisement in another column. 3b1fd

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LEGS AND ARMS

(ARTIFICIAL)

WITH RUBBER HANDS AND FEET.

The Most Natural, Comfortable and Durable.

THOUSANDS IN USE.

New Patents and Important Improvements.

Special attention given to

SOLDIERS,

Ill. Pamphlet of 160 Pages SENT FREE.

A. A. MARKS,
701 Broadway, New York.

Please mention this paper.

18-5db



THE CANADIAN BEE JOURNAL.

WEEKLY, \$1.00 PER YEAR.

D. A. Jones & Co., Publishers, Beeton, Ont., Can.

The only bee journal printed in Canada, and containing much valuable and interesting matter each week from the pens of leading Canadian and United States bee-keepers. Sample copy sent free on receipt of address. Printed on nice-toned paper, and in a nice shape for binding, making in one year a volume of 82 pages.

DADANT'S FOUNDATION FACTORY. WHOLESALE AND RETAIL. See advertisement in another column.

QUEENS AT REDUCED PRICES.

Owing to the scarcity of money I will sell my warranted Italian Queens at \$8.00 per dozen; two dozen for \$15.00.

J. T. WILSON,

18fdb. NICHOLASVILLE, KY.

FULL COLONIES PURE ITALIAN BEES FOR SALE.

Address for sample workers,

20fdb **S. F. REED,** North Dorchester, N. H.

SECTIONS.

Western headquarters for bee-men's supplies. Four-piece sections, and hives of every kind, a specialty. Flory's corner-clamps, etc. Orders for sections and clamps filled in a few hours' notice. Send for sample and prices.

M. R. MADARY,

9-20db Box 172. Fresno City, Cal.

SECOND-HAND FOOT-POWER SAWS.

We have, subject to our order, one Barnes foot-power buzz-saw, which we have taken from parties whose business has enlarged so much that they have no further use for them. It is nearly new, in good order, having all the latest improvements. We will sell it for one-fourth less than the regular retail price; that is, we will sell a \$40.00 saw for \$30.00.

A. I. ROOT, Medina, O.

DADANT'S FOUNDATION

is asserted by hundreds of practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sag, most regular in color, evenest, and neatest, of any that is made.

It is kept for sale by Messrs. A. H. Newman, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; F. L. Dougherty, Indianapolis, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Ezra Baer, Dixon, Lee Co., Ill.; E. S. Armstrong, Jerseyville, Illinois; Arthur Todd, Germantown, Philadelphia, Pa.; E. Kretschmer, Colburg, Iowa; Albert E. Smith, Snayna, N. Y.; C. T. Dale, Mortonsville, Ky.; Clark Johnson & Son, Covington, Ky.; King, Aspinwall & Co., 16 Thomas St., New York City; C. A. Graves, Birmingham, O.; M. J. Dickson, Hiawatha, Kan.; J. W. Porter, Charlottesville, Albemarle Co., Va.; E. R. Newcomb, Pleasant Valley, Dutchess Co., N. Y., and numerous other dealers.

Write for samples free, and price list of supplies, accompanied with 150 Complimentary and miscellaneou testimonials, from as many bee-keepers, in 1885. We guarantee every inch of our foundation equal to sample in every respect.

CHAS. DADANT & SON,

31fdb Hamilton, Hancock Co., Illinois.

MUTH'S

HONEY-EXTRACTOR,

SQUARE GLASS HONEY-JARS.

TIN BUCKETS, BEE-HIVES,

HONEY-SECTIONS, &c., &c.

Apply to CHAS. F. MUTH, CINCINNATI, O.

P. S.—Send 10-cent stamp for "Practical Hints to Bee-keepers."

11fdb

BEE-HIVES, & SECTIONS,

HONEY-BOXES, ETC.

GREAT REDUCTION.

All Dealers and large consumers will find it to their interest to write us for special stock-taking prices, either for present or future delivery.

16fdb

G. B. LEWIS & CO., WATERTOWN, WIS.

VANDERVORT

COMB FOUNDATION MILLS.

Send for samples and reduced price list.

21fdb JNO. VANDERVORT, Laceyville, Pa.

W. Z. HUTCHINSON,

ROGERSVILLE, GENESEE CO., MICH.,

Can still furnish Italian queens, bred from the best of mothers, and reared in full colonies. Single queen, \$1.00; six for \$5.00; twelve or more, 75 cents each. Tested queens, \$2.00 each. Full colonies, \$5.00 each. Neat white basswood shipping-crates, for comb honey, 6 cts. each in the flat. Sample, by express, mailed up, 10 cts. Make money orders payable at Flint.

18fdb

LOOK HERE!

To introduce my strain of pure bright Italians, equal to any in the United States, I will offer for August, tested queens, \$1.00 each; extra fine, selected, \$1.50 each; one-frame nucleus, consisting of one extra select queen, one frame of brood, 1 lb. bees, for \$2.00. If you want any bees, send me your address on postal and I will send you sample by return mail. Beeswax or honey taken in exchange.

15fdb

THOMAS HORN,

Box 691, Sherburne, Chen. Co., N. Y.

HONEY COLUMN.

CITY MARKETS.

CINCINNATI.—*Honey.*—There is no material change in the market for honey. Demand is slow for manufacturing purposes, while there is a fair trade in comb and extracted honey for table use. Arrivals are fair. Extracted honey brings 40¢ on arrival, according to quality. Choice comb honey, 14¢ to 16¢ in the jobbing way. *Beeeswar.*—Home demand for beeswax is fair, which brings 20¢ to 22¢ for choice yellow, on arrival. CHAS. F. MUTH, Cincinnati, Ohio.

ST. LOUIS.—*Honey.*—Not much change since our last report. Extracted honey, Southern, in bbls., 14¢ to 15¢. Northern, in kegs, 7¢ to 8¢. In 2-gallon cans, 8¢ to 9¢. Comb honey in good demand (white clover), and wanted at 17¢ to 18¢. A fancy lot would bring a little more. Dark honey, hard to sell.

Beeeswar. Fair demand, 24¢ to 25¢.
Oct. 10, 1885. W. T. ANDERSON & Co., St. Louis, Mo.

CHICAGO.—*Honey.*—Demand good for the best grades of comb honey, and prices firm at 15¢ to 16¢ for extracted. There is not any increased sale, ranging in price from 30¢ to 8¢.

Beeeswar. 24¢ to 25¢. Producers intending to market their comb honey should get it ready and send forward during the mild weather, as it bears transportation much better than when it is freezing weather. Oct. 10, 1885. R. A. BURNETT, 161 So. Water St., Chicago, Ill.

CLEVELAND.—*Honey.*—Honey has been in better demand lately, and new honey has moved off quite satisfactorily at 14¢ to 15¢ for best 1-lb. sections. Old honey has also taken a little start at 10¢ to 13¢. For extracted, there seems to be no inquiry. *Beeeswar.* 22¢ to 25¢. A. C. KENDEL, 115 Ontario St., Cleveland, O.

MILWAUKEE.—*Honey.*—The receipts of comb are beginning to arrive more, yet the supply is not large, demand moderate. Prices for best 1-lb. sections, 16¢ to 18¢. Extracted, good demand, 8¢. Oct. 10, 1885. A. V. BISHOP, 112 W. Water St., Milwaukee, Wis.

FOR SALE.—5000 lbs. extracted clover and basswood honey in 10-gallon kegs at 7¢ per lb. Kegs thrown in free of charge.

M. ISBELL, Norwich, N. Y.

EXCHANGE DEPARTMENT.

WANTED.—In exchange for new varieties of strawberries and raspberries. Plymouth Rocks, Light Brahmas, Pekin Ducks, new varieties of potatoes, and small-fruit plants, cherry and quince trees. P. SUTTON, Exeter, Luz. Co., Pa. 16-23rd

WANTED.—To exchange bees for small planer for wood, also one for iron. 18-19-20d HENRY PALMER, Hart, Mich.

WANTED.—To exchange for bees, 10,000 Mammoth-Cluster Raspberry-plants; \$1.00 per 100; \$6.00 per 1000; also 20,000 Strawberry-plants, Crescent Seedling, Cumberland Triumph, Sharpless, and Glendale; 75¢ per 100; \$4.00 per 1000. 18d W. J. HESSER, Plattsmouth, Neb.

WANTED.—To exchange one-half bushel of extra fine white clover seed for alsike clover seed. 19d to 20d M. A. GILL, Viola, Rich'd Co., Wis.

WANTED.—To exchange bees for registered Poland China Pigs. W. Z. HUTCHINSON, 20d to 21d Rogersville, Genesee Co., Mich.

FOR SALE.

50 COLONIES OF BEES in Langstroth and Simplicity hives—hybrids in good shape for winter; \$3.50 per colony on the cars, or \$3.25 as they stand. 20-21d GEO. W. SIMMONS, Newark, Del.

DADANT'S FOUNDATION FACTORY. Wholesale and retail. See advertisement in another column. 3b to 4d

Black and Hybrid Queens for Sale.

Hybrid queens, 50 cts. each; black queens, 25 cts. each; from Aug. 1st to Oct. 1st, safe arrival guaranteed. G. K. RAUBENBUSH, Reading, Berks Co., Pa.

To those in need of queens, I offer about 50 fine young and prolific hybrid queens at 40 cents each, safe arrival guaranteed.

T. F. KLOER, Terre Haute, Vigo Co., Ind.

I have now three hybrid queens for sale at 40 cts. each. Guarantee safe arrival. J. H. JOHNSON, Middaghs, Northamp. Co., Pa.

Recent Additions to the Counter Store.

FIVE-CENT COUNTER.

Postage.	[Pr. of 10, of 100]
5 | CUP AND SAUCER, china; small but cute	45 | 4 00
3 | DOLL, china-limbed, 8-inch	45 | 4 00
3 | HARMONICA, good size	45 | 4 00
3 | PICTURE KNOB, wire, and screw-eyes, all for five cents	45 | 4 00
5 | WOOD PLUGS, for lineal	45 | 4 00
6 | POCKET SCREW-DRIVER	40 | 3 50
5 | A beautiful little tool, made of tempered steel, with black enameled handles, and just about the nicest thing you can have in your vest pocket for opening hives, prying up wood frames, scraping off wax, propolis, etc.	48 | 4 50
5 | HATCHET, toy	48 | 4 50
5 | Hands and binds all metal. A splendid little tool to drive wire nails, and it has quite a cutting edge besides. A beautiful present for a 2-year-old boy-baby.	48 | 4 50
3 | INDELIBLE INK, with rubber stamp, for a single initial letter, with inking-pad and all complete, in a box for only five cents. In order to please tell what letter of the alphabet you want in the stamp.	48 | 4 50
4 | SAW, CARPENTER'S	45 | 4 00

TEN-CENT COUNTER.

5 | DOLL, china-limbed; 10 in. long	85 | 8 00
2 | HARMONICA, good	75 | 6 00
4 | MIRROR, hand, in oval mahogany frame; a beauty	85 | 8 00
5 | PITCHER, real china; a beauty	85 | 8 00
1 | BAKE, small size, for young farmers	75 | 6 00
14 | MOSAIC MATCH-SAFE	85 | 8 00
Something entirely new, and wonderfully pretty, resembling colored marble. It is having a great boom.	
2 | CRYSTAL STARCH POLISH	80 | 7 50
This is an invention of a lady, and is designed to lighten the labors of ironing-day. Mrs. Root declares it is one of the best things that has ever been given to a housewife. It saves labor, time, and strength, and prevents the iron from sticking to the clothes. It gives a beautiful gloss, and perfumes the clothes in first-class style. Each box holds over three dozen little cakes. Huber and the rest of the children think them grand things for chewing gum.	
3 | COLORED SPECTACLES for weak eyes	80 | 7 50

TWENTY-CENT COUNTER.

12 | HOT STOVE, with full set of tin ware	80 | 17 00
TWENTY-FIVE-CENT COUNTER.	
8 | MIRROR, 4x6, plate glass, beveled edges, morocco back	2 00 | 18 00
5 | TAPE MEASURE; 50-foot; nickel case	2 25 | 20 00
15 | DOLL, wax, all dressed for a party	2 25 | 20 00

FIFTY-CENT COUNTER.

6 | FIRST STEPS FOR LITTLE FEET	3 50 | 32 50
By the author of the Story of the Bible. A better book for young children can not be found in the whole round of literature, and all the same time there can hardly be found a more attractive book. Beautifully bound, and fully illustrated. Two copies will be sold for 75 cents.	

SEVENTY-FIVE-CENT COUNTER.

32 | SAW, CARPENTER'S, 24 in. long	6 00 | 50 00
With square and rule. Disston's make, marked "Enterprise".	

A. I. ROOT, MEDINA, OHIO.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column. 3b to 4d

FOR SALE. A Fine Stock and of 146 Acres, Vegetable Farm of Atlanta is the capital of Georgia. Sixty acres of fine timbered land, the rest in a good state of cultivation. Address E. B. PLUNKET, ATLANTA, GA.

Plymouth Rocks. Fine, pure-bred Cockerels of this popular breed at \$1.00 each, if taken before Nov. 15. Satisfaction guaranteed. Ref. Ed. Gleanings. Address 19-20d YODER & METZLER, E. Lewistown, Mahoning Co., O.

WANTED. A SITUATION with some bee-keeper. I have had one season's experience. Address L. C. DUNLAP, NASHUA, IOWA. 20d



Vol. XIII.

OCT. 15, 1885.

No. 20.

TERMS: \$1.00 PER ANNUM, IN ADVANCE.
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OUR OWN APIARY.

HOW TO DESTROY WEEDS AT THE ENTRANCE, BY
 THE APPLICATION OF SALT.

ANY apiarist who is at all neat and tidy about his apiary, knows what an eyesore it is to have weeds and grasses growing at the entrance of his hives, and that, too, during the height of the honey-flow, when time is precious. To take a long knife or other implement, and cut away or pull up the weeds, is not only expensive but exceedingly disagreeable. Well do I remember when it was my allotted task as a juvenile apiarist (?) to hoe away those "pesky weeds," and how those bees, "peskier" still, *would* contrive, despite my frantic efforts, to plant a sting above my shoe-top, or, worse, remind me of their presence up my trousers leg. I was young and inexperienced, and had a kind of mortal terror of the bee. To tell the truth, I am not particularly fond of meddling with the entrance of hives now. One vacation, just prior to returning to school, I placed a little salt at the entrance of two or three hives, by way of experiment; but as I soon returned to school I never knew how it resulted. Our apiarist, however, during this year and the preceding, has made it a complete success, and at a very insignificant cost. About ten days ago it took him about an hour to sprinkle salt at the entrance of 220 hives. When common barn salt is worth \$1.25 per bbl., the whole expense per entrance, annually, including time, is less than a quarter of a cent. Two days after the application of the salt you might see the weeds killed, root and all, at every entrance. Even the hardy dandelion shared the common fate. The

action of the salt works best, and is almost immediate, after a rain. Where our entrances were, a day or so ago, a little obstructed, they are now perfectly clean and I fancy the bees appreciate the change too. Now is a good time, when work in the apiary is not pressing, to kill off the weeds; and during almost the whole of the next season you will find little trouble from the weeds at the entrance. It seems to me a good deal of importance needs to be attached to this. It is expensive business, and not a little loss of the much-sought honey-crop, to have the little fellows wasting their time by bumping their heads against the weeds, and then to crawl over what is to them mountains of obstructions.

BEES FLYING OUT ON CHILLY DAYS.

Oct. 7.—It has been cold and rainy for the last two days. Yesterday, while the sun was out for a short time, a good number of bees filled the air. The sun soon disappeared, and the atmosphere became chilly as before. Then you might have seen little clumps of bees huddling together on the hive-covers and in the grass, too much chilled to return home. There must have been two or three pounds of bees at least that were lost by the sudden change of temperature. A short warm spell on a wet chilly day seems not very profitable to the apiarist.

MORE ABOUT THOSE CARNIOLANS.

This morning, Oct. 9, was cool and frosty, and I accordingly concluded it would be a good time to test more thoroughly the disposition of that Carniolan swarm. Proceeding thence without any smoker we opened the hive, but the few remaining Italians stuck up their "tails" as usual in a threatening attitude. The Carniolans acted quite differ-

ently, and seemed to be entirely unaware of our presence—in fact, like Italians on a warm day. We pointed our fingers at their “noses,” in a manner calculated to aggravate most bees. The new bees could not be induced to fly up; but the few Italians seemed inclined to resent, and darted with dire intent at the finger-point. Our apiarist then shook a frame of the bees before the entrance of the hive. They fall off quite readily, but I think not as easily as the black bees. I then shook a frame with similar results. A more extended trial next season will prove this matter more definitely. If all Carniolans are like ours in this respect it will afford another at least partial means of distinction between them and the blacks.

Now, by way of caution I would suggest that we bee-keepers be a little careful about investing in these bees too largely at first. If one or more swarms prove valuable for you during the coming years you can then invest. But, remember that the Italians have already stood a most severe test for years.

A FRAME OF BROOD AND ONE-FOURTH POUND OF BEES.

Aug. 1st, our apiarist took a quarter of a pound of bees, a queen, and a frame of brood, to see what he could do with them. Up to date (Oct. 10), without any outside assistance, it is a good strong swarm, and a very little feeding will put them in fine condition for winter. Our readers will see what can be done with weak swarms, even though rather late in the season to build up.

PUTTING THE BEES INTO WINTER QUARTERS.

Our apiary is now reduced from 330 colonies to 200 by doubling up. We shall not have to feed a pound of sugar syrup this year for the reason that, during the honey-flow, we left about a dozen of our strongest colonies to gather honey. Our object was to secure nice straight combs of sealed honey. Every colony now has from five to six of these combs in the apiary. Where such combs were not entirely finished they were filled out by placing partially filled combs in the upper story, as I told you in the last issue. You will remember, that last year our bees had almost entirely sugar-syrup stores. If our bees should die very largely during the coming winter, we might attribute the loss to the honey. However, I do not think we need to be alarmed, as the honey is well cured, and is, I fancy, what Bro. Heddon would call “well-ripened honey.”

ERNEST R. ROOT.

MORE FACTS ABOUT CARNIOLANS.

THEIR DISPOSITION AND COLOR.

AS usual, GLEANINGS came to hand promptly; and here let me say, this is the beauty of a bee-paper. This is one of the reasons I like GLEANINGS. I know just when to look for it. While scanning its contents I was much interested in Ernest's description of the Carniolan bees; and as he invites reports from others, I take the liberty of telling what little I know of them.

I find the Carniolans, when strictly pure, to all have that steel-blue color that has been spoken of, and that they resemble the blacks but very little more than the Italians do. The white-gray rings Ernest speaks of are very prominent, and will show themselves at once when crossed with other races. In form, it is true, they resemble the Italians; but I feel sure that Ernest will change his

mind in regard to their disposition when he handles them more; for I find no need of smoke at all in handling them. They remain on the combs quiet, although they can be shaken off as easily as any other race of bees I have ever seen, and, as has been said, at once cut for the hive, instead of taking wing. It is true, that when you are handling them they seem to take no notice of even robbers that may be flying around the comb; but let a robber attempt to alight at the entrance, and he is handled as roughly as he well could be. I find the Carniolans to be equal to the Cyprians for protecting their hives, and as good workers as I have ever seen, as far as I have tested them.

One other peculiar point is to be credited to the Carniolans, which is, they gather no propolis at all. All cracks are filled with wax instead of propolis; consequently the frames are free from that sticky substance gathered so largely by other bees; and then, the sections are so much nicer to handle. Besides, their combs are as white as the driven snow. As far as beauty is concerned, that depends altogether on different people's notions of color. What suits me best is, the bees that will give me the largest amount of nicest-looking comb honey with the fewest stings.

Now, I have not fully tested the honey matter to my entire satisfaction, but I have the matter of stings, and am fully satisfied that they are less inclined to sting than any other race of bees I have ever seen. When I have had another season's experience with them I will report further. I hope others will give their experience with these bees.

JAMES B. MASON.

Mechanic Falls, Me., Oct. 5, 1885.

Here is Ernest's reply to the above:

Why, bless your heart, Bro. M., I am of the same opinion still. Did you not misinterpret me in regard to the disposition of the bees, on page 658? If you will look again, you will see that I say, “As has been said, the Carniolans seem very gentle.” Also notice what is said of them in this issue in the department of Our Own Apiary. We are glad of the additional facts in regard to propolis.

HONEY LATE IN THE SEASON.

A GOOD REPORT FROM MRS. HARRISON.

LAST week I prepared some feed for our bees, *a la* Heddon, and on arranging a hive for the purpose I had occasion to lift the front of it, when I discovered it to be very weighty. The long-continued rain of the preceding week had promoted abundant bloom, followed by warm balmy weather, and honey was coming in at a rate unequalled this season, and lasted seven days. There has been no frost in this locality, but the nights are now cool.

In a letter dated Sept. 18, Mrs. Axtell, of Mercer Co., Ill., says “We are having a wonderful honey-flow just now. Before that, our bees had been living on the honey gathered two months before, not getting enough to live on from day to day. We began to think we should have to feed largely to winter on; but we are very thankful not to have to feed, as it is a big trouble, we think. Our hives are getting so full of honey now we may have swarms any day; not much surplus, however.”

Yesterday I transferred and united some small

after-swarms for a lady friend, that had been put into nail-kegs. The comb was almost all full of brood. These casts were too small to winter; and as she had a large black colony the queen from it was removed, and one from the small colonies substituted, as it was a good Italian. I never handled bees before at this time of the year, when they were so docile.

Goldenrod and asters are rather late blooming, but very abundant. MRS. L. HARRISON.
Peoria, Ill.

THE REASON WHY THE COMBS MELTED DOWN.

A LITTLE STORY WITH A MORAL TO IT.

EDITOR GLEANINGS:—Yesterday, after I had put the grape-butter to cook, and the tomato preserves to stew; had poured water on the lye-hopper, and put a tub under it to catch the drips; had superintended the digging of the holes for the posts that my wire clothes-line (price 35 cts. for 100 feet, sold by A. I. Root, Medina, Ohio) will be nailed to; after I had set Jessie to shelling the Lima beans, and Minnie to making Dutch pies; had told Mr. Chaddock to use the spool of wire (annealed and shellacked so that it will not soil the fingers, sold by A. I. Root, Medina, Ohio, for 10 cts.), to hang up his seed-corn on, instead of poles; when I had given the brass kettle to a little boy whose mamma wanted to make apple-butter in it; had put Sarah to blacking the kitchen stove (using "Dixon's best" bought of A. I. Root, Medina, Ohio, for 5 cts. a package); had hung Harry's hat on the new "hat-rack" (folding, all black-walnut, price 5 cts., bought of A. I. Root, Medina, Ohio); had tied up his finger, cut with his new "boy's knife" (sold by A. I. Root, for 5 cts.), and had cut him a slice of bread with my new bread-knife (bought of A. I. Root, Medina, Ohio, for 10 cts.), and spread it with butter to dry his tears; in fact, when I had oiled the whole household machinery, and set it to running smoothly, so that no one need call "Mamma, mamma," for five minutes, I thought I would begin to get my bees ready for winter. The first hive I went to was a dry-goods box fixed to hold Gallup frames, that I had put one of those 1-pound packages of German brown bees in. The box is as long as two Gallup hives; and as there were only six frames of brood in it I thought they would be cool enough without any top box on; and as none of the top boxes fitted, I did not put any on. Well, what do you think? Four of the six frames of comb had melted down and were lying in a crumpled mass in the bottom of the hive, and the bees had built new comb in the frames, about half way down.

Then I remembered that last week in July, when it was so hot that people forsook their beds and wandered around in the yards at night, seeking coolness and finding it not. I knew that those bees had come out and stayed out for days; but as all the other bees were out taking the air at the same time, I thought it was all right. When I saw the fix they were in, my heart rose up in my throat; for I thought if these few bees in this long box have melted combs, how will it be with those colonies that are running over with bees? I examined them and found them all right—not a single comb down; they all had two honey-boxes on; most of them had one full and one empty. Top stories

make a shade; spread-out dry-goods boxes do not. See how wise I am, after the thing is done!

MAHALA B. CHADDOCK.

Vermont, Ill., Oct. 3, 1885.

Why, my good friend, I supposed everybody knew that it would not answer at all to let the sun shine right on top of a hive when the bees in the combs were close up against said top. In the Simplicity hive we have a shallow chamber under the cover, and then have the cover painted white so it will not absorb the heat; but even with this arrangement the hive sometimes gets very hot during extremely warm weather. An upper story is better, as you say; and the chaff hive, with its permanent upper story and chaff-packed walls, is still better for hot weather, as well as for cold weather.—We are very much obliged indeed for your kind mention of the way in which our household conveniences help things along in the economy of your family duties. It seems to me, that, when that boy cut his finger, a piece of court-plaster from our three-cent counter would have been the quickest way to have fixed him up.

PREPARING FOR WINTER.

THE WAY FRIEND HEDDON ADVISES.

IN reply to inquiries sent by yourself and others, I will endeavor to briefly outline my ideas regarding wintering bees in eight-frame L. hives, or my own style of hive, as that is what is called for. I must say, that for those residing north of latitude 38 or 39, I consider indoor wintering best, safety and inexpensiveness considered. South of this I think I should prefer to have my colonies packed, and left on their summer stands. I am aware, that during our most moderate winters, that line should be moved northward; but I think it is wise for us to prepare for the worst, in every case. When so prepared we enjoy a feeling of safety that is a great comfort. I feel confident that I can winter any or every colony of my bees, with certainty, *every time*. The knowledge I lack, and so much desire, is to know if *all* of my precautions are necessary.

HOW TO PREPARE FOR CERTAINTY.

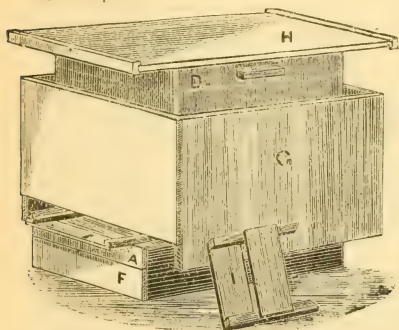
About the last of Sept. to the 15th of Oct. (according to latitude and season), remove all combs from your bees, and replace others free from all honey and bee-bread. Feed the bees properly with prepared sugar syrup till the combs are well supplied (I give them five combs, filling the space of the other three with two fillers, or dummy frames). Now, if you will place such a prepared colony in a repository where the temperature will never go below 45° nor above 50° F., it will be less liable to die in winter than will your cow or horse. You need take no notice of the humidity of the repository (a cellar preferred), nor of the ventilation, if your cellar is large in proportion to the number of colonies you place therein. Give no upper ventilation to the hives, but plenty at the bottom. Your bees will soon enter that quiescent state in which, according to Langstroth and Cook, they require but just the least bit of air.

The above is what I feel quite positive of. I think, that where that temperature is kept, that, should your combs contain bee-bread, it will do no harm, as it will not be touched. It is also true, that most

of the time our hives contain honey of such character that, after the bees have subsisted upon it for five or six months in that temperature, they will come out in spring in very unsatisfactory condition. However, I think that this is not always the case in all localities; but I think, as a rule, that if we so work our colonies during summer and autumn, that at the close of the harvest the hives contain but little natural stores, and then feed syrup on top of that, then if we carefully maintain the specified temperature, we are quite certain of success. I believe this, and shall give it careful and comprehensive tests during the coming winter. I hope to adopt that system in the future.

When we adopt the outdoor-packing system, we take more or less chances regarding temperature. I have practiced the following plan of protection, and it answers well during our open or moderate winters; but during the one just past it proved to be inadequate for this latitude.

First prepare your hives and combs to suit you; then adjust one of our cases or supers on the hive (with cloth between), and filled with any good non-conducting material, with the hive-cover on the case or super.



HEDDON'S ARRANGEMENT FOR OUTDOOR WINTERING.

By referring to the above cut I will now describe our simple and cheap method of packing. A shows the end of the permanent bottom-board of the hive; F, the stand the hive sits on; D, the case as filled, as above described; H, our summer shade-board; I, the winter bridge, composed of four pieces, 1 piece $11\frac{1}{2}$ inches long (the inside width of the hive), by $3\times\frac{5}{8}$ %, and the others $11\frac{1}{4}\times4\times\frac{5}{8}$ %, and the side-pieces each $\frac{1}{2}\times\frac{5}{8}\times9$. Now let us proceed to push this bridge into its position, the points into the entrance, the piece marked I, outside for an alighting-board, and the other piece, forming the bridge, to keep the packing out of the bees' passage-way. G is a rim made out of rough lumber, being 6, 8, or 10 inches larger, inside measure, than the hive is outside measure, thus giving 3, 4, or 5 inches of space on all sides, to fill with packing, sawdust preferred by me, and sawdust fresh from green logs does well, and soon dries out. You will see by the engraving that the sides and back end are wider than the front, and they may be enough wider to come down to the ground, or no further than shown in the engraving, as may be preferred. The hive being ten inches deep, the front end of our rim is represented as being about 12 inches, and the sides and back pieces

about sixteen inches wide; any old "cull" lumber will do for this rim. When we use them as shown in the engraving, we fill in the dust till it banks up, on the ground, and thus stops running down, and soon fills up. We press it snugly, and fill up to the top of the rim, and the dotted line shown about two-thirds of the way up the case, this line being about two inches higher than the top of the rim. In a windy situation I would advise having the rim made wide enough to come to the ground at sides and back end; here we do not need it, as we have but little wind within our eight-foot board fence, and sawdust is plentiful. Straw, chaff, or leaves, or almost any thing, can be used to pack with. Now adjust the shade-board H, as shown in the engraving, to keep the snow and rain from the packing. This board is 2×3 feet, and any moisture that drives into the top of the sawdust will dry out before it gets one inch deep; no dampness will arise two inches above the ground. I place a 15-lb. stone on the board to hold it in position.

Now, if this rim came down to the ground, and were high enough to come up to the shade-board H, and no upper case or packing were used, the hive-cover resting tightly on the hive, allowing no upward ventilation or absorption, you would have your colonies protected in the same manner as were Drs. Southard's and Ranney's 125 colonies at Kalamazoo, Mich., during the past winter, and their success was perfect. I am becoming of the opinion, that our upper absorbents are usually useless, and oftentimes worse.

The two experienced honey-producers just referred to believe this and work accordingly, and their success testifies in favor of their claims. There is much more that might well be said, but this article is long enough. I might simply add, that I can not tolerate heavy cumbersome hives for summer.

Dowagiac, Mich., Oct. 5, 1885. JAMES HEDDON.

Friend H., I feel pretty sure that bees will winter all right, prepared as you direct above, but I should be a little backward about being *so very positive*, as you seem to be. I do not know that there is any thing in the arrangement that I should object to, except the untidiness of such outside shells, made of rough cull boards. The ventilation you secure by making the case G not up to the top, is, I believe, an excellent idea, and your large shade-board H is also a good thing, without doubt; the same with your 15-lb. stone, only I am afraid I could not tolerate the looks of the thing, as I have said before. If there is any thing I do dislike to see in passing somebody's home, it is barrels sitting around the yard, with ashes or something else in them, a great awkward board on the top, and then a big stone to keep the wind from blowing it off. May be it is one of my notions, but it always makes me homesick, and I want to look t'other way, to find some pleasanter subject for contemplation. I like to see substantial, permanent structures, and then have them painted. No doubt it is only a notion of mine, but still I do like a chaff hive just on that account. But I suppose these same chaff hives are just what your concluding sentence is drifting at. One thing more, and I close: If I am correct, you would do your feeding between October 1st and 15th. It seems to me that I should prefer to do it a

little earlier, although we had excellent success in feeding even later than the last date mentioned. In our locality, 30 miles south of Cleveland, I prefer to take the chances of outdoor wintering.

NOTES ON GLEANINGS FOR OCT. 1ST.

HONEY FROM MAPLE.

OUR friend Doolittle always writes of something interesting to the practical bee-keeper, and usually we all feel like saying amen to his wise conclusions; but his conclusions as to the bee-products of our maples will not answer for all localities. I have known in one or two cases, when the weather was very favorable, when the bees secured a large amount of nectar from these grand old trees. I remember once of saying to our good friend Benton, that I believed that, were our colonies strong, and were not our spring days so capricious, our maples would be among our best honey-plants. It is very common that bees can gather pollen when the weather forbids nectar secretion. Very likely some plants are more susceptible to cold than are others. I think this is true. I do not know how the maple ranks in the list. I only know that, here in Central Michigan, the maples do furnish anon rich supplies of nectar, and that, too, of a very pleasant and beautiful kind.

RIPE HONEY.

Now, Mr. Editor, I am much interested in this matter of "ripe honey." May I send you some clover and basswood honey for comparison with that of our friend Heddon's? Ours was extracted when very thin; and if it is not equal to Mr. Heddon's, or any other, then I wish some of theirs at once. Again, we have over 200 students here, and about 300 in all in our college community. I have often extracted quite thin honey which I thought was peculiarly pleasant, and have supplied this entire community with it, and I have yet to hear the first murmur that it was unwholesome, or more likely to cause colic.

VARIATION IN THE TIME OF HATCHING BEES AND OTHER INSECTS.

Of course, we all delight to hear from our dear and revered friend Mr. Langstroth, I have often tried such experiments as he details, and often we can get drones in 24 days. Sometimes it takes 26 or 27. This is no surprise to an entomologist. We find this variation in time of development in all insects. Indeed, in our breeding insects we can vary it at pleasure, by withholding food or subjecting to cold. Eggs that will usually hatch in days may be kept for months or years by putting them in a cool place. In like manner, development in both the larva or pupa state may be retarded. From this we note that we can not give hard, fixed figures in such matters. Variation of temperature, variation in number of bees, variation of care by the bees in protecting brood from the cold, each or all may vary our figures. So the queen, the workers, and the drones, may be retarded hours or days. Still, Bevan's figures as to queen, workers, and drones, have all been verified by my own observations as correct, under the most favorable conditions.

I believe friend Hart is correct in what he says about yellow jessamine. I bargain to eat from it freely, if any one will send it to me.

We are all very sorry that Mrs. Harrison must ev-

er needs be "laid aside for repairs." Mr. Editor, if said lady is as good a bee-keeper as she is writer, she is argument enough as to the ability of ladies to become first-class apiarists.

GELESEMUM HONEY.

I read Dr. Higbie's article on gelesmium honey with great pleasure and satisfaction. I indorse every word of it. It is not the plant, I ween, but the person, and the amount eaten. One year, in the early days of this college, the students, in felling trees to clear up a place for our farm operations, were so (un)fortunate as to cut a bee-tree. You know, Mr. Editor, our students all labor three hours daily at manual work; and as the college was located in a dense forest, of course the first work was to clear away the forests. This bee-tree was cut in the forenoon; and it goes without saying, that hearty, vigorous young men needed no urging to take their fill of the delicious nectar; and when is honey ever so good as under just such circumstances? In sooth, no one could ever explain where so much honey went to. But the sad sequel—few of those students went to class that afternoon. True, none died; but many thought they were going to. It was not poisonous honey; it was not bee-stings. It was the undue eating—*overeating*—of pure rich honey. The stomachs couldn't manage such a load, and cried out, and many of the possessors of those stomachs fairly shrieked with pain. I have no doubt but that the same explanation would account for the terrible sickness of those ancient soldiers, as well as for the soldiers spoken of by Dr. Higbie.

The last part of the doctor's article I do not believe to be correct. In fact, Mr. Editor, a little thought refutes it. "Wild bees" are only tame bees in the forest. They are no whit different except in their place. If they sting honey, all our bees do. But, do they? Again, honey-comb, if stung, would not pull out the stings. Thus I think any stings seen in such cases came from crushed bees. Every bee-keeper often takes honey from bees under precisely the same circumstances that honey is taken from bees in the forest, and it is not unwholesome I have seen and eaten much of such honey, and I have never seen any such phenomenon as that suggested by Dr. Higbie.

VALUE OF ALSIKE AS A HONEY-PLANT.

Mr. Editor, I believe our farmer-apiarists do not appreciate the value of alsike clover as a honey-plant. Last June we had much white clover, but no alsike about the college. Our bees were strong, but we got very little honey. I visited my brother one day and was much surprised at the great amount of honey he had taken. I said, "I don't see into this. Our bees are as strong as yours; the distance is only twenty-eight miles, and the conditions as to temperature and rains are very similar." He said, "Come with me," and we passed to a large field of alsike clover. It was fairly loud with bees. He said, "Here is the solution. The bees have been working like this for days." Hurrah for alsike!

A. J. Cook.

Agricultural College, Mich.

By all means, send us some of the honey, friend Cook, and we shall be quite willing to own up, if need be. My objection to un-ripened honey is not that it is unpalatable when first gathered, but that it gets bad after being kept. Perhaps if exposed to the air, so as to allow the surplus water to evap-

rate, this would not be the case. Our troubles have been, that it would sour when put into bottles immediately after extracting.—I agree with you in regard to alsike. It seems to me that here is a field for bee-men who are farmers; at least, so far as my experience goes, a field of alsike is a pretty safe investment.

THE PICTURE OF FRIEND HILTON'S APIARY IN OUR LAST ISSUE.

HE TELLS US MORE ABOUT IT.

GLEANINGS is here, and the cut of apiary is nice. You say my letter is altogether too short. I didn't know it would be published when I wrote it. Yes, the square building in the center of apiary is my honey-house and extracting-room. The queer-looking arrangement in my hand is for taking down swarms, and is made of an oak half-bushel basket, with handle removed, and a pole fastened to the bottom. It is light and strong. The shop in the rear is where we put together and paint our hives; but the stuff is gotten out at the mill just under the hill, in the background of the picture. The 100 hives you speak of were ordered by W. D. French, then living at Columbus, Ohio, but later he ordered them sent to near Grand Rapids, where he now has a fine apiary and trout-pond. The lumber that made those hives was delivered at the mill for \$4.50 per 1000, and paid for in honey, although there is not a pine-tree in sight of our place. Those you see in the distance are hemlock.

Many thanks for kind words, and especially your closing remark. **UNCLE GEORGE & Co.,**
Fremont, Mich., Oct. 5, 1885.

HUMBUGS AND SWINDLES

PERTAINING TO BEE CULTURE.

THE BOHEMIAN-OATS SWINDLE, AGAIN.

ABOUT one year ago, I think, I saw in GLEANINGS a reference to an oat swindle that had been perpetrated on the farmers in your vicinity by the Bohemian hullless oat. Parties are now in this vicinity, securing many orders for them at \$10.00 per bushel. If there are any of this kind of oats for sale in your neighborhood, please inform me at what price they can be bought, or at what price you can ship me a bushel or two.

D. E. BEACH.

Mina, Chaut. Co., N. Y., Oct. 1, 1885.

Friend B., the oats can be purchased in any quantity for from 75 cts. to \$1.00 per bushel. Any reliable seedsman can furnish them, or they can be had in Cleveland and various places. Ferdinand Schumacher, of Akron, O., the largest manufacturer of oatmeal, perhaps, in the world, recently stated in the *Ohio Farmer* that he did not want them at any price. They are not suitable for making oatmeal, and are not desirable for any purpose. The swindle is one of the most shameful frauds that have ever cursed our rural population. No further proof is needed that it is a fraud, than to hear the

men who sell them say they don't care if the oats are sold at a dollar a bushel, or less, and then go right on selling them at \$10.00 per bushel, on the plan that has been so many times written up and explained.

Since the above was written, we have received the following from friend Kendel, of the Cleveland Seed-Store:

We have no Bohemian, or "hullless" oats in stock. They are unworthy of cultivation. Horses do not like them; for oatmeal they are of less value than common oats, and we have not heard of any point they excel, except in gulling credulous farmers. We sometimes have them offered, and think we could get them for about 50 cts. per bushel, but should want to be assured that they were intended for legitimate uses only, as in your case. If we have any offered soon, we will write you.

A. C. KENDEL, Seedsman.

Cleveland, Ohio, Oct. 6, 1885.

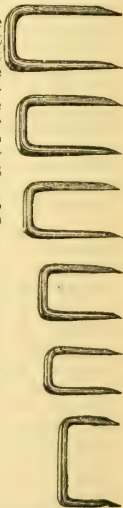
DOUBLE-POINTED TACKS MADE OF STEEL WIRE.

A VALUABLE ACQUISITION, USEFUL TO BEE-KEEPERS AND PEOPLE IN GENERAL.

OUR friends may remember that double-pointed tacks have been talked about some little time. We have succeeded in getting them at a pretty low rate by the pound, so they really do not

cost much more than common tacks by weight. Below we give you cuts of six different sizes and patterns, the cut showing the full size of the tack. Both larger and smaller sizes are made than those shown; but at present we have in stock only the two middle sizes. Price 5 cts. for a package of two ounces; 18 cts. for a half-pound package; 30 cts. for a full pound; \$2.75 for 10 lbs., or \$25.00 for 100 lbs. If wanted by mail, add 18 cts. per lb. for postage and packing.

These tacks are being used extensively for putting down carpets. The carpet can never get away, the head of the tack can not pull off, and at the same time they are easier to draw out than the common tacks. They are also very useful for many kinds of woodwork. The wood can not very well split, because the two points inclose a piece of wood; and although they are made of flattened steel wire, the temper is such that they can be clinched so as to be wonderfully strong and secure. The points are made by cutting the flattened wire at an angle, so as to leave a keen tapering steel point that will go straight into any thing, even zinc or tin. Very small sizes are quite useful for repairing baskets, and are much stronger than any ordinary tack.



SEEMINGLY ANOTHER PHASE OF THE DISEASE FOUL BROOD.

HOW TO CURE BY THE INTRODUCTION OF A NEW QUEEN.

I WROTE you over two years ago (see GLEANINGS, page 276, 1883), in regard to a brood disease that was prevailing in this vicinity; and as I have received inquiries lately in regard to whether I have found any remedy for it, I shall be pleased if you will allow me to reply in GLEANINGS, hoping thereby to benefit others as well as those who have inquired. The following is a copy of a card that I received a few days ago:

I noticed your article in May No. of GLEANINGS, 1883, on foul brood. I have found it in my apiary, the same kind that you speak of; others have it in this vicinity. Have you found any remedy? If so, you will much oblige by writing to me.

S. H. WETMORE.

Wellsboro, Tioga Co., Pa., Aug. 28, 1885.

Since the publication of the above-mentioned article I have given the matter a good deal of attention, and on some points of the trouble have arrived at the following conclusions:

1. That the disease is not contagious by contact, or by introduction of bees, honey, comb, brood, etc., from an affected colony into a healthy one.

2. That the infection is transmitted by the fertilization of the queen by a drone from a diseased hive. Although I am not positive the infection is conveyed in the manner mentioned, I have what I think very strong evidence in that direction. But allowing the foregoing to be correct, I am not yet able to say why so large a proportion should be affected. I now understand its management so well that it no longer has any terrors for me. I have cured every case that has occurred among my bees in the last two years. All that I have found necessary is to remove the diseased queen and introduce one that is healthy and fertile, with sufficient amount of fresh bees to clean up the premises. I have generally succeeded in the following way:

Remove the diseased queen, and allow the hive to stand eight days, then open and cut out all queen-cells started, and introduce a frame of honey, brood, and adhering bees, from a healthy colony from which to raise a queen. Cases managed in the ways mentioned have mostly banished every trace of the disease in about two months. It seems to be important to supply the diseased colony with a fresh force of workers to do the house-cleaning. In one case where I introduced a queen and the few attendant workers received by mail, it took nearly two years to overcome the trouble, and required considerable feeding to keep them from starving, till they got well. But they eventually got through all right.

Last season I thought the Italians were not subject to the trouble; but this summer I have found two colonies, apparently pure Italians, among my 75 that have received the "offensive taint."

I am glad that I am able to assure bee-keepers that there is no danger of spreading the infection by contact with the diseased matter, as I have frequently taken frames from diseased colonies and put them into healthy ones, without transmitting it. I have owned and kept bees continually for 38 years, and have used the Langstroth frame since 1858. As we have no basswood, and but little buckwheat or fall flowers, I have never been able to get very large yields of honey. Nearly all our surplus is from the white clover; and as it was nearly all

winter-killed we have got only about 1000 lbs. of dark stuff from the poplar and other timber-trees. I think it is about four years since I first noticed the disease among my bees, but I am pretty well satisfied now that they had it for more than twenty, as I never extracted, and seldom opened the hives, as they did not yield me much profit. I will add, that the disease doesn't seem as virulent among the Italians as among the common blacks. I think very likely it is mistaken by some for true foul brood. It seems to be a venereal disease of the honey-bee; but call it what we may, it has done immense injury to the bee-business over a large scope of country.

MILTON HEWITT.

Perryopolis, Pa.

Friend H., the information you furnish is quite important; and since you mention it, I am inclined to think the greater part of the diseases that affect bees can be cured or prevented by the introduction of a new queen, in the way you allude to; for introducing a new queen is virtually making the old colony a new colony. If we could cure a sick horse by putting another one in his place, without very much expense, what a wonderful thing it would be! and with bees we can do this with comparatively little or no loss. The nameless bee-disease that has been so much talked about, I am quite certain would yield to just such treatment. In fact, this plan must cure any disease, *not a contagious* disease, for it is virtually removing every thing but the combs and contents.

MRS. CHADDOCK ON THE SORGHUM BUSINESS.

HOW TO DISPOSE OF THE SYRUP AFTER YOU HAVE GOT IT.

NO, I do not mean that people must not carry on business, or neglect business in order that they shall not worry. I like to work, to buy and sell, to make bargains, and to live up to them. I am very sure that if I had been a man I should have been a merchant, or "a big cattle-man." I like the excitement of trade, the hurry and the bustle; but I am not going to worry. Every year we raise sorghum, Mr. Chaddock does not think it pays to raise sorghum; he says it is cheaper to buy it. I know that it *does* pay to raise it. So we children raise it, strip off the blades, cut off the tops, cut it down, load it into the wagon, drive to Aunt Jane's, and unload it there. We like to do it. Two of us go with the load, and two stay at home and cut up another load. Every year Aunt Jane told us we could either pay 25 cents a gallon for having it made up, or else give her half the molasses; and as we never have any money we always gave half. This year we did not make any bargain, supposing that we could have our choice as usual; and when we had half the crop hauled she told us that we would have to pay the money, she was not going to take any molasses this year.

As soon as the children told us, Mr. Chaddock said, "You will have to buy another barrel now;" and he said it in the tone that means, "I told you so."

Well, I went right down to see Aunt Jane, and she said, yes, she wanted the money, and she wanted it "right away." She advised me to go to town, buy an extra barrel, engage the molasses at some store,

etc., but I thought I knew a trick worth two of that. I came home, took the horses and buggy, and Mollyony, and I drove around on the prairie and engaged all the molasses we had to spare. We left home at one o'clock, and came back at four. The folks will bring their jars and kegs here, and we will take them to Aunt Jane's on a load of cane, on Monday. Aunt Jane will measure the molasses into their vessels, they will come and get their molasses, without my touching it at all; they will pay me, and I will pay Aunt Jane for making it. No worry at all, no bother, every thing fair and square, and everybody in a good humor. Here was a first-class chance to worry, but I lost not a wink of sleep, the matter being all straightened out before sleeping-time came.

Vermont, Ill.

MAHALA B. CHADDOCK.

Mrs. C., that is the idea exactly, and I am with you at every step of it; but the thing that would worry me or make me feel a little anxious would be in regard to the quality of the syrup. If it were only equal to the samples of some I have seen, everybody would be pleased and happy, even if they had to pay more for it than store syrup costs; but if it didn't happen to be real nice, what then? May be Aunt Jane has the knack of making good syrup every time, no matter whether the cane is just so or not. If she *has*, that is the place to trade. I like to sell things as well as you do, provided they are real nice; but if they are *not* *real* nice, I always wish I were in some other business; and if you once get the reputation of dealing in nice honest goods only, then you can always sell readily.

THE SUNDAY QUESTION, AGAIN.

MRS. JENNIE CULP GIVES US ALL A GOOD LESSON IN TRUST.

FRIEND ROOT:—In a foot-note to sister Chaddock's reply to Nellie, on the Sunday question, you not only appropriated my text, but answered the question to *my* satisfaction; but as you are not a sister, and it was "the sisters" she wanted to hear from, I feel impelled to be as good as my word.

I am sorry to disappoint the little folks with the rooster story, for it is a big folks' story; yet it will benefit them to read it, especially if it should lead them to ask and trust the dear Father for temporal as well as spiritual blessings as it did me.

Sister Nellie, in my estimation your friend gave you the right kind of advice—"Trust they will do as well without you." Only carry it a little further; talk to the Lord about it; tell him you want to be diligent in business, and succeed, and you also want to be his faithful, willing child; and if in earnest, I feel satisfied he will make your pathway clear. "Remember the Sabbath day to keep it holy."

Saturday evening I dismiss my bees from my mind, as I do the rest of my week's work; on the morrow I give them no anxious thought; if they swarm I have them as I would take the "ox out of the ditch." We do not stay at home to see it fall in, neither should we stay home to see if the bees are going to swarm. If we are willing to suffer loss for Christ's sake, and his cause, I feel confident he is able and willing to hold our bees in check, if it is best, if

we ask and trust him. "Not a sparrow falls to the ground without *his* notice." "Even the hairs of your head are numbered." Our petitions are all heard if we come to the dear Father with childlike simplicity, in faith believing.

While husband was living I could not get the consent of my mind to like the bee business, on account of the anxious care he manifested, especially on Sunday. Hiring some one to stay at home on Sunday to watch the bees was as wrong to me as to stay at home ourselves, even if they were not in the habit of going to church. This was before queen-clipping came in fashion. After his death I could not get the consent of my mind to part with *one* of his bees, for, next to his wife and children, he loved them above every thing else. Before the swarming season commenced I was in company with some friends visiting, when one of the company laughingly threatened to tell a "rooster story" on sister H., a widow lady present, who was a dear friend of mine. When alone I asked her to tell me the joke they had on her about the rooster.

"Sister Culp, they may laugh all they please at me; it is no joke, but a grand reality. I go to my heavenly Father for temporal aid as well as spiritual blessings, and he gives it to me, for he knows I desire above all things to do his holy will, and many a time he has sent you over here in answer to prayer." And I could then recall to mind quite a number of times I had suddenly been impressed with the thought I ought to go and see Maggie. I would arrange and go, and she would invariably meet me at the door with a smile, and "I knew you would come." Now, her story is this:

"I had my little garden nicely made, and there was an old rooster that annoyed me very much. During the week I could watch him myself and keep him out. On Sunday, when time came to go to Sunday-school and church, I asked the Lord to keep him out while I attended. I then dismissed it from my mind, and went. After services, a friend invited me home to dinner with her. I studied a while to see if there was any thing in the way. Finding nothing, I said, 'Yes, I can go just as well as not.' We started and got part of the way there, when all at once my garden came in my mind. I stopped suddenly. 'No, I can't go.' 'Why?' 'I asked the Lord to keep the rooster out of the garden while I was at church, and the time is past up. I must go right home.'"

She arrived just in time; for while she had been losing, as she thought, unnecessary time in getting home, he had succeeded in getting in, but had done no damage. This little story, as related by the dear sister, set me to thinking as I had never thought before, and I concluded to go to the Lord for aid in temporal things, and not go, either, in an off-handed manner, as I felt I had been in the habit of doing. My bees give me no more anxious care on Sunday than do my cow and chickens; and if I have ever lost any thing by attending Sunday-school or church, I am not aware of it. I never allow them to keep me at home on Sunday.

Sister Chaddock says religion is a sentiment. With me it is a faith, a trust, a confidence, a *grand reality*—more to me than father and mother, husband and children, houses, land, bees, or any thing else you could enumerate. Shorn of it I should be of all persons most miserable. But with the conscious indwelling of the Holy Spirit in my heart I

have joy, peace, and rest, which the world can not give nor take away.

Thanks, sister C., for your kind sympathy. It is true, I am alone a great deal of the time. It is now near 10 P. M., and I have not seen a human being to-day, which is often the case, but I am not lonely. I miss the sweet companionship of husband, daughter, and mother, all of whom crossed over to the "ever green shore" within two and one-half years of time. But the assurance that they are safe and happy, free from care and sorrow, is a wonderful comfort to me. A few more days, if faithful, I shall join them, never to be separated.

I am glad you like me, for indeed I do appreciate it, and must say, in return, I like all the sisters, and have a kindred feeling for the brethren too. Strange, isn't it?

I see you are a little disposed, like the editor, to make fun of that maple-sugar feeding. He said I "fed it with a vengeance." I do not think he had any idea how much I fed—just guessed at it. I will tell you, and you can keep still about it. To begin with, my bees were not like Pharaoh's lean cattle; they did not need much *fattening*. I bought only 50 lbs. in cakes; had 28 colonies of bees, so you see it did not average 2 lbs. to the colony. Frost killed the fruit-bloom, so there was no honey, and that "maple sugar" carried them over to the white-clover flow, and there was enough taken off, when the surplus-boxes were put on, to furnish the three children all the maple sugar they wanted, all summer.

Hilliard, Ohio, Sept. 23, 1885. JENNIE CULP.

GRADING HONEY FOR MARKET.

DOES IT PAY TO BE STRICTLY HONEST IN SELLING HONEY?

EVERY thing you say on that subject (page 602) is true. I do not doubt that corn story. As it pays to have a perfect article, it also pays to have the superior and inferior by themselves, with prices to suit. This leads me to tell how I market my honey successfully. Springfield, Ills., is my principal market. Methods of marketing there, and here near home, are different. There, customers expect to pay what is asked them, and they take fluctuation in prices as a matter of course. But here, if I sell at a certain price one year, I find it very hard to ever rise above it. For that reason I have endeavored to keep the home price at 15 cents in any quantity. In doing that I am perpetually accosted with, "Why, I got honey last year for 12½ cents." Some who always like a choice article pay me my price without a word; but, how shall I suit the other class? Thus: I always put choice grades on exposition in Springfield. Two of the best merchants there are now selling for me on commission. My honey generally excels, and is never excelled by any lots that ever go there. Consequently my honey always gets the highest price. If *mine* will not sell, none will. I have learned this by experience, and I know it is so. My honey is now bringing 18 to 20 cents retail, which is 3 to 5 cents higher than other section honey is selling. Both these men have refused honey that they could get on better terms, in order to handle mine. Col. W. is the choicest dealer in the city. His customers know that they often pay him higher prices than they would have to pay elsewhere; but they also know that they always get a first-class article

from him. Well, the colonel has, at times, turned off several lots of honey, hoping that I would come along. About a month ago, when I stepped into his store for the first time this year, a conversation followed, part of which is in substance as follows:

"Colonel, do you want to handle some honey?"

"Why, yes, if it is nice. What is the quality of the honey? as nice as in previous years?"

"Yes, sir; fully as nice."

"What do you want for it?"

"Oh! well, about 16 cents per pound."

"Why, you are a little high, aren't you? There was a man in here the other day, who said he would bring in a sample of section honey that he offers at 12½ cents."

"Well, I do not want to sell mine at that yet awhile."

"Well, I should like to handle some of your honey, but they are selling it all around here at 15 cts."

"Will you sell some for me on 10 per cent commission?"

"Yes."

"Then I will send in a case next Tuesday."

I sent in the case of honey, and he put the price at 20 cts. per lb. I do not know whether that man brought his sample of honey or not; but when I was in three weeks later, the colonel had not bought any of it.

There! do you see it? But, what about that cull honey? Why, when everybody objects to my regular home price, I tell them about said cull honey, and, "Come and look at it." If they are a little slow to do so, I take it to them and say, "Here is some honey as good as any; but you see it does not look as nice as the other; this box is crooked; that one is bulged; this one is not all sealed over; that one is pretty dark; it does not market very well. You may have it at 13 cents." I always sell that honey to some one. The quantity of this inferior article is surprisingly small. Yes, all you say about grading is true. But there is another thing comes in here, which I want to talk about, although I am making this letter longer than I intended. Will you please indulge me? It is this:

BE A MAN OF YOUR WORD—BE HONEST.

At our dinner-table not long ago the dealing of certain men came up in conversation. A farmer near here sold a lot of cattle, to be delivered on a certain day. He turned them on to a freshly blossoming clover-field the day before, in order to make them weigh heavy, and in violation of contract too. It would have been bad enough if no such stipulation had been made. He on other occasions had been guilty of like tricks. I immediately exclaimed just what I felt—I would not have men think such things of me for all the fortunes I could make by it. I am not alone in this matter. There is one man in Springfield I like to deal with largely on that account. Once when I was settling up with him he said, "That jar of extracted honey weighed 22 lbs."

"You are surely wrong, Mr. Wright. It weighed only 20 lbs. on my scale."

"Well," said he, "now since you mention it, when I sold it I weighed it with a dipper in. I remember now of taking it out afterward. I did not notice what I was doing at the time."

I could easily have made 25 cts. by remaining silent, and he would never have known that I knew he was wrong; but, bless your heart! I would. My conscience would not have let me forget it. That is not all; I think Mr. Wright knows he can trust me.

and Col. W. as well. I would regard a person correcting a mistake thus for me as a pretty reliable fellow. Now, when I offer a man my cull honey, I tell him I can not sell it at a first-class price—that this is why I offer it so low. I do not tell him that “my regular price is 15 cts., but I will let you have it for 13. Please do not say any thing about it.” It would be just about the trick of a certain grocer in our town. He is one of the best business men in the village. He is as good a hand to attract custom and build up a trade as I ever saw, except in this feature. This, people can not but find out, and some men will not be lied to—not more than once or twice. Those who trade with him will not trust him, and they sometimes let him know it too. How could I endure such a reputation, even if nothing else were involved? To say nothing of its moral phase, such double dealing will injure, and often ruin one's business. It has ruined the business of one man I know, who once had the largest run of custom in the place. Suppose I sell A a good lot of honey at 15 cts. per lb., and B, an inferior one at 13 cts., but give him the impression that he is getting a favored bargain. For even second-rate honey, mine is called “so nice.” A happens to inquire of B how much he paid me, and B tells him. A comes to me with a complaint that I dealt unfairly, as he would have reason to do. I tell him the true reason I sold B that lot at reduced price; he carries it to B, and B in turn throws it up to me. How would I feel? Both would have just reason never to trust me again. Such transactions leak out, if practiced. No! it will not pay to deceive thus. I will tell the truth so plainly that men will know I am dealing squarely. I do not claim to stand pre-eminent and alone in the matter. I only want to show that it pays to be a man whose word is pure gold.

In your talk about grading products you struck a point whose importance can not, it seems to me, be overestimated, and one so true that I felt prompted to show by personal experience how true it is. This last subject seemed so nearly related that the former appeared incomplete without it. I intended to touch on some other matters, but, as usual, my letter has grown so long that I must stop right here.

Geo. F. ROBBINS.

Mechanicsburg, Ills., Sept. 23, 1885.

Friend R., your article is not a bit too long, while you teach such lessons as the one given above. I have often thought of these very things you mention; and while I think of it, I must confess that a man lowers himself in my estimation just as soon as he begins to tell me that he will let me have things so and so, if I won't say any thing about it, and things of like nature. I have sometimes told such men that I did not want goods lower than other people paid; and they would look up at me in surprise, supposing, of course, that all men are little and small, and greedy for every copper they can get or save by hook or by crook. Of course, I am sometimes told that I can have prices so and so, because of the unusually large bills that I make. That is a different matter. The man who is tricky, succeeds eventually in tricking himself; and, worst of all, the poor fellow never finds it out until he has tricked himself out of business, and oftentimes out of a home.

PLANT-LOUSE NECTAR AND BARK-LOUSE NECTAR.

PROF. COOK TALKS TO US ABOUT CALLING THINGS BY THEIR RIGHT NAMES.

PROF. COOK:—I send you a sample of honey, or bug-juice, that the bees have been gathering at a fearful rate for the last fifteen days. Some swarms have gained 30 lbs. I never saw bees work faster. They drop on the alighting-board by the hundreds, heavily laden. The queens are laying as much as they would in June. They have brood in all stages, and plenty of it. Give them empty combs and they will fill it right up with bug-juice and brood.

It has been July weather all of this month, with the exception of a few days. We have had two frosts this month—one the 7th, and one the 22d. The bees are building new combs, and lengthening out cells as much as they would in June or July. I have taken off all sections, to keep them from putting this stuff in them.

Bees have not made much honey since the 10th of August, although we had a good yield from raspberry, clover, and basswood. They are now going it on this. I don't know what you would call it. They get it off blackberry, this year's growth. The top leaves are all curled up in a bunch, about the size of a man's fist, and there is a bug, or louse, on the leaves, very thick. The hind part of them is white. The bees are swarming over the briars as thick as they would over a field of buckwheat in full bloom.

I live near the old pineries that have grown up to blackberry and raspberry. There is one thing certain—we shall have plenty of young bees to go into winter quarters; but, how about the wintering part on this kind of stores? I should like to have your opinion on this. My opinion is, that it is going to be bad stuff to winter on. My bees had enough to winter on before they commenced on this. I fed a few swarms upon sugar syrup. I wintered last winter in cellar. Would it not be better to winter on summer stands packed? If it should be an open winter, so they could have a light once in a while, they probably would go through all right.

Orona, Mich., Sept. 28, 1885.

L. REED.

The following is Prof. Cook's reply:

With the above letter came a half-pint bottle of nice-looking honey which, though not so light as clover honey, was considerably lighter than that from goldenrod or asters. I tasted of the honey thoroughly; and while I do not pronounce it by any means of first quality, I do think it is quite palatable. That I might have the judgment of others, wholly disinterested in the matter, and wholly unprejudiced by previous knowledge as to the source of the honey, I asked three members of the college faculty to sample it. All said, that, while they did not consider it equal to what I had usually given them, they thought it quite pleasant. As one gentleman said, “From fair to middling.” As any one familiar with entomology will see at once, this nectar is from plant-lice (family *Aphidae*), and not from scale-lice or bark-lice (family *Coccidae*).

Plant-lice are very common, there being few species of plants that do not harbor and nourish some species. Their presence is often denoted by the presence of ants passing up and down the plants in quest of this very nectar, which they, at least, pronounce pleasant and wholesome. These plant-lice are always active, are frequently seen to move about on the plants, and in almost all colonies some, usually but few, have wings. What a wise provision! The development of wings is ever at the cost of nourishing material, and so, unless needed, had better be absent. Thus they are wanting except in a few, which may fly away and so prepare to distribute and the better propagate the species. We bee-keepers wisely copy from such examples given us by nature; and so soon as our queens have done

with their wings—after mating is over—we cut them off. We see this is not against nature; and he who reasons that such queens are not just as acceptable to the bees, opposes both reason and experience.

These plant-lice are flask-shaped, and often oviparous; that is, the eggs hatch within the parent, not outside (oviparous), and these young, when hatched, are born at once, and are not nourished for a time by material from the blood of the mother (viviparous), as are the highest mammals. A little watching in the summer, or on house-plants in winter, will demonstrate this statement. The young lice will be seen at the moment of birth. Outdoors, the last females of the season lay eggs (oviparous), which pass the winter in some crevice, and hatch as the warmth of spring excites development. These plant-lice are also agamic, or illustrate the law of parthenogenesis. Thus they are specially interesting to bee-keepers, who witness the same law in the development of drone-bees. All the summer broods of plant-lice, and there are several, are composed wholly of females. If any of these are captured at birth, and placed at once singly on a plant suitable to their growth and development, each one will mature and produce, or give birth, to many lice. Indeed, our secluding them is quite immaterial, as the closest scrutiny will find no males till fall, when males and the oviparous females appear and mate, antecedent to egg-laying. Plant-lice work almost wholly on the leaves or green tender twigs.

Mr. Reed speaks of the leaves curling up. This is not uncommon. In many cases the leaves retain their shape, but seem to become enfeebled, and the plant dies. In some cases—indeed, quite frequently—the leaves curl up and die. In a few cases, as on the elm and poplar, galls are formed. The curled leaves and galls must serve as both food and house for the lice. Thus such plants obey literally the beautiful commandment, "If thine enemy hunger, feed him," for such plants bestow both shelter and food upon their most hurtful enemies. Nearly all of these plant-lice secrete nectar, some from two tubes (nectaries) which protrude obliquely up and back from the abdomen; others, and perhaps all, from the general surface of the body. This is a secretion; and it experience proves it to be always wholesome, it should not be denounced or regarded with disfavor any more than milk, which is wholly analogous in its origin. This nectar serves the lice in attracting bees, ants, and wasps, which act as sentinels to keep birds and predaceous and parasitic insects from destroying the lice. At the same time, the nectar serves the bees and ourselves as food.

I have often called attention to the difference between this plant-lice (*Aphis*) nectar, and that from the bark-lice. While the former is pleasant and wholesome in all cases, so far as I have examined, the latter (which comes from the flat, scale-like, motionless bark-lice) is bitter, strong, dark, and unwholesome. It is certainly unfit for table use, and I should not deem it fit food for bees.

As to Mr. Reed's query, I should have no fear in using this honey for winter stores, even with the bees in the cellar. Should they die with this honey, I think they would die with any other. I should not be as willing to have my hives stocked with this bark-lice nectar, such as was so common a year ago; yet several used it in cellar wintering, even last winter, with entire success. It may be, that if every thing else is all right, such food would an-

swer; yet I should be afraid of it. I dislike to feed my bees what I would not eat myself.

I hope, Mr. Editor, we shall call these substances plant-lice nectar, or secretion, and bark-lice nectar, or secretion—not "bug-juice." The latter term has neither science, accuracy, nor euphony, to recommend it.

A. J. COOK.

Agricultural College, Mich.

Friend Cook, we thank you for making this distinction: but it seems to me that the name you suggest is not much of an improvement—that is, so far as pleasant suggestions are concerned. I do not like the word louse or lice, and I never use it if I can avoid it, although I have placed it at the head of this article. Can you not suggest a name that does not have any such unpleasant term about it, especially when speaking of honey to those who know comparatively little about such matters? I do not like to see my friends turn up their noses when I am explaining the wonders of the bee-hive or the forest. Why not say, bark-aphis nectar and plant-aphis nectar? that is, if we must use the word nectar, when nectar seems such a misnomer for the greater part of these products. Honey-dew is not the word, for two reasons: it is not dew nor is it honey. Now, before we settle down upon a name, can't we have one less objectionable? For my part I would have it Latin, rather than to awaken disgust when trying hard to do quite the contrary. I am very glad of the important facts you give in this wonderful matter of these secretions from insects.

DRY FÆCES.

FRIEND MILLER GIVES US SOME PRETTY POSITIVE FACTS IN THE MATTER.

PROF. COOK has mentioned my name as sending specimens of dry fæces of bees. I merely forwarded to him specimens sent me by Mr. S. Corneil, of Lindsay, Ont., which were put up so nicely, and which were such good specimens, that I felt sure Prof. Cook would be interested in seeing them. I am not interested in the discussion about dry fæces—perhaps not as much as I ought to be, for I confess that I am ignorant of the exact bearing it has upon bee-keeping. Perhaps Prof. Cook or Mr. Corneil will inform us on this point. The most I know about it is, that Mr. Corneil, with his usual painstaking character, has been trying to show that bees can and do void fæces dry, and that Prof. Cook has been for years just as strongly opposing, only latterly admitting that they may exceptionally do so. I don't know that I care two cents which theory is correct, and would hardly enter the lists with any less noble foe than Prof. Cook, whom, with all my respect for him as an author and scientist, I hold in still higher esteem as a friend and brother. And I now enter the lists only so far as to state what has come, without seeking, directly upon my own observation among my own bees. If Prof. Cook had been here when my bees took their flight last spring I am not sure but he might have said that dry was the normal, and liquid the exception. I am not mistaken, I think, as to what I saw, for I have often seen the bees in the act of voiding, both this and other years, and have seen thousands of specimens such as Mr. Cor-

neil sent, both on the hive and in the vicinity. I presume I could even now find instances which the summer's rains have failed to wash away. I remember one hive last spring (which was, however, exceptional), in front of which the ground for the space of perhaps two square feet was covered so thickly that I am not sure but less ground than faeces was to be seen. It seemed as if the whole colony had by one consent emptied themselves just as soon as fairly away from the hive; and I doubt if there was among their droppings a single one that would have been called liquid. The cylindrical form could be plainly seen. Without knowing what may be, elsewhere, my testimony for this locality would be, that bees usually void faeces in liquid form, but the dry form is very common.

WAX-EXTRACTOR.

After I sent to GLEANINGS an account of my sun wax-extractor, there were cooler days, in which the wax utterly refused to run, and I adjourned the inside gearing to the kitchen stove, where it acted to my entire satisfaction. To any who have not large quantities (indeed, I am not sure but it will work well with large quantities), and who are obliged to use fire heat, I would recommend for trial the following:

Take something in the form of a dripping-pan, with one corner torn open; put it in the oven of the cook stove, with a chip or bit of wood to raise the back part of it. Let the open corner project out of the oven, and place on the floor a vessel to catch the drip; throw in the pan your wax to be extracted, and that's all. Don't be in a hurry; all the better if it melts quite slowly; and if the fire be pretty hot, one or both oven-doors can be wide open.

CLEANING WAXED UTENSILS.

In various ways it will happen that milk-pans, crocks, etc., will be more or less daubed with wax. The attempt to clean them as dishes are ordinarily washed will be an ignoble failure. Don't try to wash them with *hot* water. Here is a dish in which some honey has been melted, and a little wax has been in it. If you attempt to wash it with water hot enough to melt the wax, you will succeed only in having the dish more thoroughly waxed. But wash off first the honey with cold water, at least cool enough so it will not affect the wax; then wipe dry, and heat till the wax melts (if the dish is not too large, a good place is in the stove oven), then take pieces of newspaper, and, without allowing to get cold, simply wipe the dish clean of wax.

CAN BEE-GLUE BE UTILIZED?

A good deal of propolis will be accumulated in cleaning off sections. It makes good fuel. Can any better use be made of it? A year or two ago I conceived the idea of melting it up and coating honey sheets, or quilts, with it. The attempt was an utter failure; but in heating the bee-glue I found a liquid settling on top, which, on carefully pouring off, I found to be very nice beeswax. As I had a large quantity of bee-glue, I obtained, if I remember rightly, about 7 lbs. of wax. C. C. MILLER.

Marengo, Ill., Oct. 1, 1885.

I hope the friends will excuse me for taking this matter up again, after once saying I thought it best to say nothing more about the subject for the present. Friend Miller, however, gives us some facts from experience that have not been given before. I have felt sad to see the parties on both sides

of this question talk so vehemently, and, I must confess, a little stubbornly, sometimes, when it seemed to me, as friend Miller expresses it, it did not matter very much who was right or who was wrong. I should like to put in just a word, though, for our friend Cook. If I am correct, the principal point at issue was, Do bees drop dry faeces on the bottom-board of the hive while in winter quarters? The friends on one side of the question insist that they do, and that that is the healthy and normal way for bees to winter. Even friend Miller does not claim to have found dry faeces on the bottom-board of the hive, although he has found considerable quantities in front of the hive, that might almost be said to be dry faeces.—In regard to wax-extractors working by the sun's rays or by putting in the oven, on the ingenious plan suggested above, do not all such arrangements leave considerable nice wax among the debris? I agree with friend Miller exactly, in regard to cleaning wax from utensils. Trying to scrape the wax off with a knife is the poorest plan in the world, and it annoys me greatly to see the women in our wax-room undertake to work in this way. I have for some time been aware that what is called "bee-glue" contains considerable nice wax.

KILLED BY BEE-STINGS.

WHAT WE CAN DO TO AVERT SUCH CATASTROPHES.

THE following sad case seems to be authentic, without question. An important thing for us as bee-keepers to do is to decide upon the best course of action when such things do happen, although it is only once in a great while.

SINGULAR DEATH OF MRS. FADER, A PENNSYLVANIA BEE-KEEPER'S WIFE.

Thomas Fader, of this place, keeps several hives of bees in his garden. Yesterday forenoon he was at work among his bees. A man with whom he had some business dealings, called at his house to see him. Mrs. Fader went out to call her husband into the house. As she approached the bee-hives a number of bees flew into her face, and she was stung several times. One of the bees stung her in one of her nostrils, and another one stung her on the upper lip, at the base of the cartilage dividing the two nostrils. Mrs. Fader's cries brought her husband to the spot. He extracted the stings and applied wet earth to the wounds. He went with his wife back to the house, and had no thought of any consequences resulting from the bee-stings more serious than the swelling and pain. He left his wife in the kitchen, applying ammonia to the wounds, and entered a front room, where his visitor was. A few minutes later he heard a heavy fall in the kitchen. He ran out, and found his wife in convulsions on the floor. Her nostrils were swollen shut, and her lips were twice their natural size, and had turned dark blue. She breathed short and quick through her mouth. Her face was so swollen that its identity was entirely lost. Mr. Fader hurried his visitor after a doctor, but before one arrived his wife died in her husband's arms. The doctor said that the stings in her lips and nostrils had sent a shock like electricity to her brain, and from that to her lungs and heart, so severe that she was unable to rally from it. Mrs. Fader was twenty-eight years old. It was but forty-five minutes from the time she was stung until her death.—Gouldville (Pa.) *Special to New-York Sun.*

At first thought it almost seems as though no one was at fault in the above transaction, and that there was no way of averting such

an occurrence, or of saving life where the symptoms are so severe. Lest any one be frightened by it, however, I will say what I have said before, that deaths from bee-stings are nowhere near as common as deaths from accidents from horses. Accidents are liable to happen with almost any kind of the domestic animals; but for all that, we want to see what can be done toward saving life. Had our poor friend who lost her life been accustomed to bees, or had had her thoughts about her, I hardly think she would have gone among them when they were stirred up, as they evidently must have been. I have seen people push ahead into an apiary when I should have known, before I came within several rods of the hives, that one would be sure to be stung if he did not retreat. One who is familiar with bees learns to tell very quickly when it is safe to go among the hives. Another thing, when I decide to go among angry bees I always shield my face by pulling down my hat, and putting my hands before my face. This action alone seems to have considerable effect in keeping the bees away from the eyes and nostrils. I seldom get stung in the face nowadays. If at all, it is on the back of my neck or the back of my hands—possibly on the ears or forehead. The swelling from a bee-sting may obstruct the breath; but usually in such cases, I think that with sufficient presence of mind an attendant ought to be able to keep the passage to the windpipe open. In cases of swelling of the throat from quinzey, the handle of a spoon is often used for this purpose. It may be, however, as stated in the above clipping, that death resulted from some other cause than suffocation.

It is a good thing to give place to these accounts, that people may be warned, where they are unaccustomed to stings, or where much pain and swelling follow, to be careful about recklessly exposing themselves when bees are infuriated from any cause, as they must have been in the above case. I do not believe that I would resort to ammonia or any thing, unless it is cloths wet in cold water, to allay the fever. Of course, the stings should be extracted promptly; but it should be done without squeezing the contents of the poison-bag into the wound. The blade of a knife is often the readiest means of doing this.

PREVENTING AFTER-SWARMS. AGAIN.

FRIEND DOOLITTLE GIVES US SOME ADDITIONAL
IDEAS IN THE MATTER.

ON page 600 I see Bro. Heddon could not be persuaded to adopt my plan for prevention of after-swarms, and does not think any will tolerate it when once they "get the hang" of just how to use his method. Well, as far as Bro. H. is concerned I presume I ought not to expect him to even try the plan I gave, for he "can not be persuaded" to try friend Root's chaff hives, nor even the Simplicity size of the L. frame. Again, he must have Heddon's hives, honey-boards, shade-boards, non-erasing crayons, and that 15 to 25 pound stone, all of his own, so I am content to let

him have them, and to use his plans without further molestation; but for the benefit of those who use chaff hives, tenement hives, house-aparies, etc., I wish to tell them how nice the plan I gave on page 557 works. Many have complained of the unwieldiness of the chaff hive in swarming-time, and urged that as a reason for not adopting it—especially the ladies, who had nearly their match in trying to move even an eight-frame Langstroth hive. To all such I would say, that I have come to the conclusion that chaff hives are an actual necessity for outdoor wintering here at the North, and in the future I expect to use no others, except for those I winter in my bee-cellar. That the plan given on page 557 gives all the advantages that Bro. Heddon's plan does, I think no one will deny; and it is especially adapted to chaff hives, as I have proven during the past three seasons. The box used for carrying the combs need not weigh over 5 lbs., and a handle convenient for carrying can be readily attached to it, so that any lady can use this plan without fatigue, no matter what hive she uses, while the chaff hives, large tenement hive, or the Townly chaff-packed dry-goods boxes, are just as easy of manipulation as any. In short, I have never used any thing about the swarming of bees which worked so perfectly, and pleased me so well, as this plan for the prevention of after-swarms.

WHERE THE BEES CAME FROM TO SWARM ON THE
HEDDON PLAN.

ON page 600 Bro. Heddon wants to know, "Whence did that colony get bees to swarm with?" referring to a colony treated exactly as he says they should be. Well, I will try to explain. When I first began to try the removal plan to prevent after-swarms, as given years ago, I noticed that many colonies would often not stir at all for two or three days, while others would commence to work their new location at once; and in either case such a hive was sure to swarm. Once in a while one would keep on giving off bees, which left the hive in a straight line, until the colony was fearfully reduced, in which case no swarm would issue; but these latter were the exception rather than the rule. One other item bearing on this point: Several years ago I gave in GLEANINGS how I was led to form nuclei by taking a frame of brood, with queen and bees from any hive, and placing it where wished in any empty hive, the bees, as a rule, would adhere to the queen; while if no queen was given, all the bees that could get back to the old hive would do so. From this I learned that a colony having cast a swarm looked upon their queen-cells the same as any other colony did on their queen, after which I carried a frame of brood and bees with a nearly ripe queen-cell, and placed in an empty hive to form a nucleus, when in most cases the bees would not return. Now, this has a direct bearing in this locality on the moving of all hives which are especially anxious about their queen or cells. Just as soon as I would move a hive on the Heddon plan, the bees would stop issuing from it in less than one minute after it was placed on the new stand, and there they would stay for two days, when out would come a swarm. In one instance I moved a hive in the middle of a bright day, and immediately the bees stopped drawing off. For three days I watched to see a bee leave or return to that hive, and not a bee was seen. At ten o'clock the third day, or ten days from the time the first swarm left, they swarmed again,

when I cut out all the queen-cells and returned them. They now went to work with a will, and gave me 62 lbs. of honey in sections. Again we had much rainy weather during our swarming-season, so that the day on which the old colony was to be removed would be rainy or cloudy, so no bees would be flying; in which case, if moved, of course no bees would be in the field. I generally left them until the next day; but on one occasion the 6th, 7th, 8th, and 9th days were all rainy or cloudy, so I waited till the morning of the 10th, when several colonies were moved, and all swarmed soon afterward, owing to the sun coming out bright and warm. In this latter case there can be no help in the matter where any hives are manipulated, and I think even Bro. H. can see plainly where the bees come from. In all cases where I could be on hand when the young bees were having a playpell in the afternoon of the 6th day, and move the hive when said bees were out the thickest, I could make a success of the Heddon plan. G. M. DOOLITTLE.

Borodino, N. Y.

Friend D., you seem to have your own notions, and friend Heddon has his own notions, and each of you succeed quite satisfactorily, because your ideas and ways are all in accordance with said notions. I have often noticed the way in which you say it works when you move a hive away during cloudy or rainy weather; but your idea in regard to moving a hive while they are out playing, is something I never thought of; and without question the idea is a valuable one. By this means we can get a nice lot of young bees, just the right age to make the nicest kind of a nucleus.

BEE BOTANY,

OR, HONEY-PLANTS TO BE NAMED.

LEAF-CUP.

I SEND some seeds, leaves, and flowers of a plant to be named. It is a wild autumn flower growing in the woods. At the present date the bees are at work on it quite lively. It is an annual, growing 3 or 4 feet in height. While watching the bees at work upon it I could not see that any of them were gathering pollen. Besides this plant, bees are now working quite fast on buckwheat, also on smartweed and other kinds of wild autumn flowers. There is an immense lot of smartweed this year. All through the first part of the season, the bees could not do much; but when basswood bloomed they worked finely. CHARLIE L. GREENFIELD.

Somerville, O., Sept. 23, 1885.

Prof. Devol says of it:

The specimen sent is leaf-cup (*Polypnia Canadensis*, L., variety *discoidea*, Gray). It is a coarse, broad-leaved, climbing plant, without value, growing in shady ravines and moist woods. It is peculiar in having the corolla in the few florets that produce achenia (seeds) reduced to a hairy ring around the base of the style. W. S. DEVOL, Botanist.

VIRGIN'S BOWER (CLEMATIS VIRGINIANA).

I should like to know what kind of plant this is. It is a vine, and is covered with flowers; the bees work on it all day in great numbers.

Cornwall-on-Hudson, N. Y.

J. B. CLARK.

Prof. Devol says:

The plant is the common virgin's-bower (*Clematis Virginiana*, L.), the pretty wild vine growing along the rivers and fence-rows, covered in mid-summer with fine white flowers, and in autumn with fluffy, feathery balls of a creamy-white color, so beautiful for winter decoration. It is quite easily transplanted, and makes a beautiful arbor, screen, or trellis plant, a number of branches from each root growing from 10 to 30 feet in a season. The downy balls are caused by the plumous tails attached to the fruit.

W. S. DEVOL.

Ohio Agricultural Station, Columbus, O.

FALSE STATEMENTS IN REGARD TO THE HONEY BUSINESS OF OUR COUNTRY.

As a protection to our bee-keeping population, we propose in this department to publish the names of newspapers that persist in publishing false statements in regard to the purity of honey which we as bee-keepers put on the market.

MR. C. F. RAYMOND, of Cleveland, Ohio, sends us the following, taken from the East End *Signal* of Sept. 19, and credited by them to the Chicago *News*:

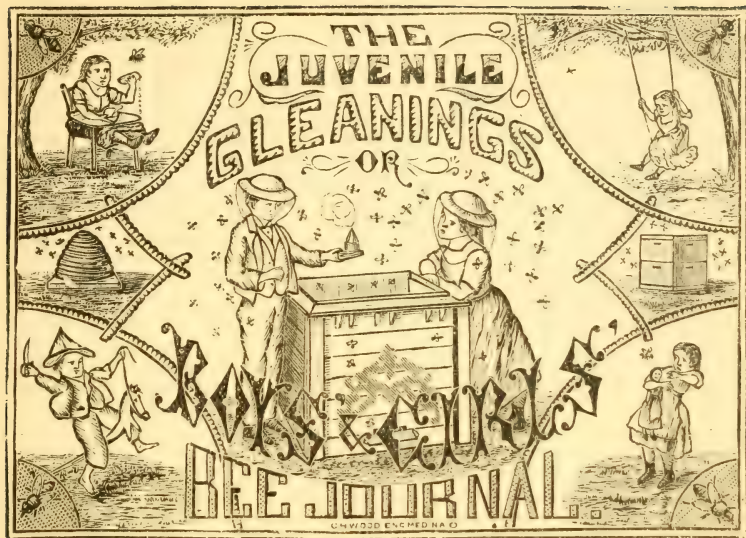
WHAT BEES ARE COMING TO.

A Michigan apiarist has succeeded in teaching his bees to make honey from glucose. He began by setting pans of syrup near the hives, and as the bees became habituated to sucking sweets from them he daily reduced the amount of syrup more and more and filled in with glucose, until finally the bees were sucking only straight glucose, and making honey at an astonishing rate. The small, bare-footed son of the apiarist, who innocently "gave the old man away" to a Detroit reporter, said that the bees made about twice as much honey under the new method as they used to when they had to spend most of their time gathering raw material from flowers and clover-blossoms.

We have long thought that bees were too primitive in their methods. We have had a sort of intuitive belief that they were capable of high civilization if man would only influence and direct them in proper and useful channels, but never until now have we had substantial proof of it. The Michigan apiarist, however, has opened a field so broad that it seems almost boundless. The possibilities suggested by his successful experiment are bewildering. If by straining glucose through bees a man can get honey, why may he not strain chalk and water through them and get choice milk and cream, or banquet them on soap-grease and get prime Orange County butter? Why may he not feed them on logwood and cheap alcohol and obtain a first-class brand of port wine? or, by substituting some other ingredient for the logwood, get a "superior article" of any other convivial beverage?

It is not well to educate the bees too highly all at once. But if we carry on the civilizing process gradually there is no reason why the bee may not become one of the most useful factors of future progressive civilization.

The writer of the article seems to recognize the story as a fraud, judging from his pleasantry; but after all, it seems to me that even pleasantry is not the thing where credence in such reports may be a wholesale damage to a large number of innocent people. If the *Signal*, and all other papers that have given such reports a place, would come out frankly and correct the impressions to which they have given publicity, and state that glucose is not honey, and feeding it to bees can in no way make honey, any more than feeding chalk and water to a cow can change it to milk, they might do us some service in righting the wrong they help to disseminate.



He that is faithful in that which is least, is faithful also in much. LUKE 16 10

MYSELF AND MY NEIGHBORS.

Thou hast been faithful over a few things, I will make thee ruler over many things.—MATT. 25:21.

Cast thy bread upon the waters; for thou shalt find it after many days.—ECC. 11:1.

I FELT as though I wanted these two texts, little friends, to indicate what I want to talk about to-day. The thought was something like this: That men go along a great while, sometimes, trying hard to do right, and it does not seem to amount to much of any thing. Finally, however (it may be years after, and when we had forgotten all about how hard we tried to say, "Get thee behind me, Satan,") the reward comes. We had cast our bread upon the waters of this world long years ago, and supposed it was lost and forgotten. But here is a wave that brings it up again. Again, we may be growing in Christian graces, and we may be growing, too, in our ability to help the world along, and not know it or think of it. Do you remember in that passage where Jesus told the good folks that they had been helping him all along, and they did not know they had helped him at all? The text reads this way:

Lord, when saw we thee a hungered, and fed thee; or thirsty, and gave thee drink? When saw we thee a stranger and took thee in; or naked, and clothed thee? Or when saw we thee sick, or in prison, and came unto thee?—MATT. 25:37-39.

Now for my little story:

Our railroad company have decided to widen their tracks right here before our factory, and they are also building a new depot.

a good deal, I believe, for the accommodation of our business. In order to make the track wider they have had to cut down a hill; and to do this they are working right in front of our factory windows with a steam-excavator, if that is the proper name for it. It is a great ponderous engine made of timbers and massive chains; and in front of it there is a great iron scoop with massive steel horns that dip into the ground until it gets a mouthful, and then it drops it out on to one of the train of gravel-cars. As it is a new thing in our town, crowds of people gather around to see it dig through the hill. It really looks at first sight like some of the old sea-monsters, with its gigantic frame and monstrous head. This head it dips down into the hard stony ground, and roots up a small hill as if it were a hog rooting in a potato-patch. When it gets a load on its nose it swings its long neck around and drops the dirt in the right place, as if it were alive. Then it noses about to see where it will commence to root next time. Huber calls it "Great big angel." He has probably got his knowledge of engines and the angels his papa has told him about, a little mixed up; and I have wondered sometimes whether the term "angel" would be so much of a misnomer after all. It must be a messenger of mercy to the poor men who have for ages done all this hard work by back-breaking toil. When the operatives of this machine got it well started, so that every thing worked all right, smoothly and safely, the ponderous thing seemed to warm up with exercise, and to really put on life. The

great neck swings around so quickly that it makes the chains rattle like a tornado, and the massive beams creak and groan under the enormous strain of the heavy loads that that neck of iron raises up. One stands by and feels like lifting his hat with reverence toward the little man who stands perched up between the timbers forming the arch of the neck while he pulls the different levers that make the great machine do his bidding. How is it possible he can do all this without making a mistake? The great iron tusks, as they appear to be, strike in just the right spot, and go just deep enough, and not too deep. At this very instant the steam begins to do its work, as we have evidence by the enormous puffs. The earth trembles beneath our feet while the ground is rent and torn as if by a small earthquake. But the minute these great tusks reach the surface of the ground, the enormous power all of a sudden eases up; and as the machine swings around with its load it seems as quiet and obedient as a little child. Surely this man who manages it, and who has the trained eye, to skillfully direct this great power, must be a man of wonderful intellect; he must be a man of great education and skill. I gazed on him and then on the machine in wonder, and went back to my work, leading Huber, who obeyed his papa, but rather reluctantly. In the evening somebody was in the counter store, looking at a hammer. He was a very commonplace-looking individual, and one who spoke our language but imperfectly. Yes, he was the one who handled those levers and wheels and chains during the day. Was he a college graduate? No, but just as good a man in God's sight, and he may be better than a good many who have borne honors. He was a man who had probably been faithful in his every-day work, and his employers had learned by degrees to intrust him with important machinery; and at length he became an adept in his line, and could make that piece of mechanism for that particular work rattle and bang in a way that seemed almost frightful to bystanders; yet he did it with perfect safety, and with little danger of breaking or injuring any part of it. He simply did his duty in the place where God called him. Dear friend, are *you* doing your duty well and faithfully right where God has placed you? I want to come a little nearer home yet—am *I* doing *my* duty well and faithfully—casting bread on the waters some of the time, feeding my fellow-men for Christ's sake, and doing it all gladly and patiently? I am afraid I am not.

Since our last issue went to press I decided to visit the city of New York. It was a sudden conclusion to go. I told Mr. Holmes, my brother-in-law, that I wanted to stay only three or four hours. He gave me a severe talking to, and told me I had no *right* to go to New York and stay only three or four hours, even if I did feel like doing so. I concluded, after thinking it over, that he was right. It would be selfish for me to go so far, and stay so short a time, and that my duties toward my fellow-men and toward you, dear readers, demanded that I should stay at least a couple of days. In order to

save time, I rode with the engineer on a locomotive to our nearest station on the N. Y., P. & O. Railroad. Now let me digress a little.

For some time lately I have been making it a subject of prayer to God that he would give me more love toward my fellow-men, and he has been opening my eyes in that direction. It is true, that I occasionally have fits and spells of loving even my enemies, but, with sadness I say it, I have a good many fits and spells of *not* loving very much even my friends; that is, if I don't look out I keep dwelling on the weaknesses and imperfections of my fellow-men. Sometimes I get into a real bad spirit because somebody has heedlessly wronged me out of a few cents. I do not often say very much about it lately, for God has taught me to keep it to myself when I can not do any better. And he has also taught me to get out of this bad state of mind. I talked to you about it last month, you know. Well, I am naturally very bashful, if that is the word. I am afraid of people. I get notions in my head that they don't care any thing about me, and don't want to be bothered, when directly opposite is the truth. Jacob told me I could ride down on the locomotive when they went down to fill their water-tank, but I thought they would not want to be bothered with a passenger. I spoke to our agent about it, and I felt ashamed of myself when I saw how kindly he undertook to make arrangements for my going. Jacob told me they were all ready, and that I must hurry up and jump on. Ernest helped me to scrape up my few "traps;" and when I came to climb up by the engineer, instead of finding a gruff sort of swearing man, which I had pictured in my mind's eye, I found a very quiet, friendly, boyish-looking fellow who reminded me, by his hearty good nature, of some of my own German boys. I felt ashamed of myself; and when he offered me a part of his dinner, because he had noticed I had forgotten to bring any, I felt more ashamed still. In my talk with him I pretty soon found that he was the very engineer who was running the engine at the time our old friend Fred was killed. He knew of me through Fred; and when I had been casting bread on the waters by visiting boys in jail, I had been making for myself a warm place in the hearts of these sturdy laborers. I watched my new-found friend as he pulled the levers and handled the ponderous locomotive, moving it an inch at a time, if need be, and starting it up so gently that only a very small amount of power was needed, so that it seemed like a child in his hand. He, too, had been faithful in few things, and now the company intrusted him to the care of this great locomotive; and from what he said about Fred I knew he had been a great many years filling his place of important trust. Little did I think, when I went into our county jail and plead with these boys for the cause of Christ, that my work would be felt years after among these rough hard-working men along the line of our railroad.

When saw we thee a hungered, and fed thee? or thirsty, and gave thee drink? or in prison, and came unto thee?

AUNT KATIE TELLS US A WHALE STORY.

ALSO SOMETHING ABOUT CALIFORNIA ACROSS THE COUNTRY.

ABOUT five weeks ago we saw an account in a paper of two whales being seen off Port Harford, sixty miles away, and some one shooting at them with Henry rifles, and securing one of the whales. About a week ago we read in our local paper that a dead whale had stranded on the beach near Point Sal, twenty miles from here, and that it had four bullet-holes in it. Being so near, we concluded to pay it a visit. So we loaded up our wagon with tent, bedding, and provisions, and plenty of wraps (for the ocean breezes at the beach are quite chilly). After picking up a friend from Missouri, who had never seen a whale, we all joyfully rode along. We made a camp-fire beside a wayside spring, at noon, and made a cup of tea, and ate our lunch. Then we arrived at the beach about 4 P. M.

That the whale? Why, it looks like a monstrous black rock; and, see! it has a white tail. We soon got near enough to see that the tail had been "peeled," as the boys called it; that is, the fat, which was from two to six inches thick, had been cut off. The whale had stranded on its back, and the sea was dashing against it, so we were unable to see the head, the part we wished most to see; but we were told that the tide would be out in the morning, so after looking at the huge monster till we were tired, and feeling almost fear at the tremendous breakers as they dashed upon the beach, we retired back from the shore and pitched our tent among the sand dunes which extend along the beach at this place. By keeping to windward we escaped all scent, which is slight, considering the size of the object, and the time it had been stranded. We then got our supper. As we were sitting by the camp-fire after supper, one young gentleman who was among the hands trying out the fat, came up and invited the male members of our party to a coon-hunt; but being pretty tired, they declined. The next morning the boys told us they got four coons, and that as soon as a coon found himself chased he would make for the water; that one coon had caught hold of the dog's ear and had tried to hold his head under water, and that George had run out into the surf and helped get the coon, and that he got wet through. He got the coon, though, and that paid him for the wetting.

The tide had been down and up, and was now going down again; and as soon as it got low enough they were going to cut off the head of the whale so that they could turn over the body in order to get the rest of the outside fat, of which they had secured only about a fourth. They had 500 gallons of oil rendered out. We waited until 10 A. M., but the tide had not gone down enough to get at the head without getting wet by the breakers, so we did not see any more of the whale than we had seen the evening before; but we ran all around it between the waves, and some of our company went on top of it. Three men and a boy didn't occupy much space on that mountain of flesh. When first found it was quite out of the sand, and it was measured. It was 72 feet long, and 15 feet high. Every time the tide came up, the body settled into the sand, and it had flattened out till it looked like a black floor, big

enough, almost, for a skating-rink. The flukes at the end of the tail are put on opposite to what a fish-tail is, and each section which lay spread out upon the sand was about five feet by two, and about five inches thick. When they are angry they bring the tail flat upon the water, with force enough to smash a good-sized boat.

As we could not stay any longer we packed up and started back home. We showed our friend where the men used to haul the wheat raised in the Los Alamos and Santa Maria Valleys, to be shipped by steamer to San Francisco, until the railroad was built; and as we had come to the beach by one road, we thought of returning by the other road the men often took on their return, rather than meet the six-horse teams and the attendant dust. We had loitered about Point Sal until we found we couldn't get quite home that night, so we went on until we came to the Los Alamos Creek, expecting to find water as in olden times, but found it dry. So we followed it up until stopped by a fence. We then camped among some willows, and fortunately found water, borrowing some potatoes from a field near by, and there we found out why the creek was dry. It had been used to irrigate with. We got supper. We had been out longer than we had intended, so our provision-box was about empty, hence the potatoes. In the morning we found a gate, and passed through into a field, and soon found a road. It had been partly made, and was over quite a large hill. The men had to hang on to the side of the wagon with all their might, to keep the wagon from tipping over. You may be sure that I and the "little ones" did not ride until safely at the top. We had some sport laughing at the notices to trespassers, warning them not to cut timber on the place. As nothing was to be seen but brush for miles, we wondered where the timber was. After going along the road about three miles, and finding that we were going away from home, we felt uneasy; but as unbroken fences barred the way, we had to keep on or go back ten miles. We soon espied a man in a buggy, coming toward us. He proved to be an acquaintance, and the overseer of the ranch where we got the potatoes. So we told him we had added a "T" to each word of the name of our valley, to describe our condition, making it Los-t Alamos-t, and we mentioned the potatoes. He told us the road home, and said that was the right thing to do when one was hungry; viz., help yourself from a friend's garden, and that we ought to have driven up to the hay-stack near the field, and fed our horses. There is California hospitality for you.

While digging the potatoes our Missouri friend objected; but we told him that as we gave so often of our abundance to campers and tramps, when we were in a strait we only paid ourselves, always in moderation, of course. Our friend treated us to some of the fruit of the prickly pear, which he had in his buggy. The natives and Mexicans like them very much. It tasted to us like a sort of mixture of cucumber and musk-melon, quite eatable when nothing better can be got. We traveled three hours from the night's camping-place before we reached a road that led us home. We had camped ten miles from home, and at 10 A. M. were still ten miles from home. We were wishing that Bridget had some nice coffee made when we got home.

"Who is Bridget?" says the baby. We had to acknowledge that we were Bridget, so the coffee was not ready, of course; but we soon had some when

we did arrive, voting that we pretty nearly paid too dearly for the whale, but not quite.

Los Alamos, Cal., Sept. 7. AUNT KATIE.

Well, Aunt Katie, I have learned something from your little story, any way, for I did not know before that whales come along the coast of California. I find it also quite interesting about your trip across the country. I think your disposition must be something like mine. Whenever I go anywhere I always want to go back a different way. My wife objects, because she says I always get lost, or waste a good deal of time; but I tell her it is worth being lost, just to feel that you are on a road you never traveled before. I always like to be on a spot that is to me an "unexplored region."

GOOD REPORT FROM A JUVENILE.

40 GALLONS OF HONEY FROM 20 SWARMS; ALSO SOME OTHER THINGS OF INTEREST.

ACCEPT my thanks for the book you sent me. It was more than I expected or deserved. We make farming our chief employment; have not lost any time, to amount to much, from the farm, to tend bees, until this year. We make our own hives and frames, and can't afford to buy them. Last spring, on going to Pond Creek to improve some land, we carried 15 weak swarms (late after-swarms from last year), three new swarms, and two nuclei as a kind of experiment. I did not use any foundation or empty combs in supers. No one lived on the place. I went in company with my pa every ten or fourteen days (as we could spare the time from the farm and home apiary), examined each colony, made note of condition, date, etc., on front of the hives. We tried our slates, but the wind blew them down, and the rain washed the note off. We increased to thirty colonies by division; to avoid swarming we put on supers early in May, and had two colonies badly weakened by after-swarming (overlooked queen-cells). We have extracted 354½ gallons up to date. They have thirty or forty gallons in supers at this time, but we have no time to extract. We did not extract from brood-chamber after June 5th and 6th. We found at that time the queens had been crowded from the brood-chamber to the supers. The ABC book said extract. We did so. We placed brood-frames in lower story June 5th and 6th, and extracted 86 gallons. Imagine our surprise, on returning, June 17th, to find the front and side of nearly all the hives covered with idle bees building comb on the outside of the hives. We used the extractor and put on another super, and all hands went to work as nicely as ever.

Horsemint was in bloom, and waist-high all over the apiary—indeed, all over the country. On the 7th of August a neighbor carelessly let fire get in our inclosure. The dense grass, from knee to hip high, and dry from long drought, was soon in flames. The timely arrival of five or six neighbors saved our apiary from total loss. One colony was burned, several others badly damaged. One of the men had his hands badly burned in fighting the flames. Some of the trees 20 feet high had all their leaves burned off.

Last spring we killed two large rattlesnakes in our apiary, from which it takes its name. The rat-

tlesnakes in that neighborhood are as thick as pig-tracks.

We had no rain in Rattlesnake apiary from May 27th until July 5th; none since that time up to date. I wish to say to the juveniles, your letters telling of your little sisters and mothers make me envy your happy lot. My mother died five years ago, depriving me of a mother's care, and, dearer than all, a mother's love. My two little sisters, seven and eight and one-half years old, live with their aunt in Bell Co., Texas.

SAM. H. TERRAL.

Jones' Prairie, Texas, Sept. 14, 1885.

Why, my good friend Sam, if you have a locality where honey comes in at such a rate that your bees all build combs in front of the hives, it must be a "big thing" indeed. If such a thing ever happens again, you want to let the farming go, and stick right to the bees; sit up nights, do almost any thing, rather than let the bees lie idle during such a harvest as that.—We deeply sympathize with you in the loss of your mother.—I would have a piece of plowed ground around that apiary, broad enough to prevent the fire from running into it again.

MAKING BEES HATCH HEN'S EGGS.

AN UNPATENTED INCUBATOR.

WE live 200 miles southwest of Dallas. We have pre-empted us a little home four miles south of Lampasas, consisting of 19 acres. Our bees, 30 colonies, are in good condition.

Pa has invented us a cheap incubator. Take a simplicity wide frame, cover it with wire cloth, fill it with hens' eggs, then place in a strong swarm, putting a frame of unsealed brood on either side of it, and lift out and turn the eggs once in 24 hours. The eggs will need no moistening, as incubator-books direct, but the bees will tend to that. We have not hatched any quite out; but late last year pa suggested that if his queens hatched well under a hen we would try eggs in a bee-hive. So ma put in twelve, and they nearly hatched. The bees swarmed a week before time for them to hatch, and it came a cool rain, and they died in the shell. Ma broke the eggs and they had great big chickens in them. We are going to try more this season, and pa said he would say nothing about it until we hatched some chickens out; but ma thinks that some one else can try also, and be successful.

Lampasas, Texas. AMANDA ATCHLEY, age 12.

Well, Amanda, you have got something original, surely; but I am inclined to think, that, as a rule, sitting hens would be cheaper than a strong colony of bees. Unless the weather is extremely hot during the whole three weeks, I do not believe a colony would keep the eggs warm enough, unless you make a chaff cushion to fill, say an inch and a half or two inches of the space all around the wide frame; or, what will be simpler, and easier done, cut out the center of a chaff-cushion division-board. Tack wire cloth over this central hole, and put the eggs between the two sheets of wire cloth. A good swarm of bees would, without doubt, under favorable circumstances, hatch, say five or seven eggs. When hatched, take out the egg-shells, and you might use the

arrangement for a brooder, providing you put on double wire cloth, so the bees could not sting the chickens.



Every boy or girl, under 15 years of age, who writes a letter for this department, CONTAINING SOME VALUABLE FACT, NOT GENERALLY KNOWN, OF BEES OR OTHER MATTERS, will receive one of David Cook's excellent five-cent Sunday-school books. Many of these books contain the same matter that you find in Sunday-school books—eating from a plate, \$1.00 to \$1.50. If you have one or more books, give us the names that we may not send the same twice. We have now in stock six different books, as follows: *Alphabet*, *Sheep*, *Off*, *The Count*, *Eller*, *The Roby Family*, *Rescued from Egypt*, and *Ten Nights in a Bar-Room*. We have also *Our Homes*, *Part I* and *Our Homes*, *Part II*. Besides the above books, you may have a photograph of our old house in Paris, taken a great many years ago. In it is a picture of myself, Elsie, Eves, and Caddy, and a glimpse of Ernest. We have also some pretty little colored pictures of birds, fruits, flowers, etc., suitable for framing. You can have your choice of any one of the above pictures or books for every letter that gives us some valuable piece of information.

"A child's among ye takin' notes
An' faith, he'll print it."

WELL, little folks, while my papa's gone to New York, I'll just crowd myself up in this little corner, and give you a little talk on how to write letters. He won't know any thing about it until he gets home, will he? With your keen bright little eyes, and willing hands directed in the right way, I fancy you may be able to tell even some of the "big bee-men" something they didn't know before. Now just listen, and perhaps I can tell you how. When you sit down to write a little letter, read very carefully the fine print at the top of this page. It says you must write something new. That is a pretty hard task, isn't it? Some of our big folks find it so, at any rate. Now, as you have got lots of energy and a pair of eager little eyes, I believe you *may* beat your papas and mammas if you try real hard. Now I am going to give you a sample of a letter such as we don't want, because it has become stereotyped; that means, over and over again; see if it doesn't sound natural.

"My pa keeps bees. I don't like bees, but I like honey. My pa has a pig, a cow, and a calf. I have got two brothers and three sisters. I go to Sunday-school. If this is worth a book, send me one."

The above gives no new fact of general interest; and while it did very well at first, it sounds old now. Perhaps I am expecting a good deal from you little folks, but the last two or three issues of GLEANINGS proves that you *can* write real good letters if you try.

Now I am going to give you some work to do. While the bees are getting a little pol-

len, tell us, as well as you can, from what flowers the bees are gathering it, and its respective color; how they put it on to their legs, and how they take it off. One more, and then I'll stop. Mark a bee in some way that has lost his sting (perhaps you can cage him best), and tell us how long he lives, or whether he dies at all. I am aware these are hard; but if you get your mamma to help you, I think you can do it. Now if you will try to help me, I will give you a talk upon a bee's leg; won't that be a queer subject?

I'll sign myself— HUBER'S BROTHER.

ANOTHER HUBER.

My name is Huber. My brother Charlie has five hives of bees; he takes GLEANINGS. I think your Huber is as full of mischief as I ever was.

Geance, Ill.

HUBER ALLEN.

TWO BITS OF WAX.

My father has 15 hives of bees. This morning he was out, when a bee alighted on his hand, and he let the bee sit a while; and when the bee flew away he left two little bits of comb on pa's hand.

HENRY WILLIAMS.

Branks, Meade, Aug. 30, 1885.

A SWARM OF BEES THAT STAYED ON A CURRIANT BUSH ALL NIGHT.

We have 12 hives of bees, and I have a house in the garden, just beside the hives. Last summer I found a swarm of currant bush, that had been on the bush all night.

THERESA LINTON, age 7.

Amherst, Ohio.

BEE-POISON, AND HOW IT AFFECTS SOME PEOPLE.

My cousin has many hives of bees; he takes in honey every year. His name is Willie Blair. When the bees sting him it lays him in bed about a week; but when the bees sting us it does not harm us.

Stutebort, S. C.

GEORGE S. ELLISON, age 8.

A LITTLE GIRL WHOSE PA TOOK 650 LBS. OF HONEY.

My pa has lots of bees, all Italians. He sold 650 lbs. of honey last year. He has a foundation-mill, and I help him to make foundation. I love to help make it and put in section boxes.

Ellismound, Ill.

EMERY PEER, age 10.

JOHN'S LETTER: SOMETHING ABOUT WHITE-FACED CATTLE.

My uncle has eight hives of bees. They made 350 lbs. of honey. He went to Aurora, Ill., on Christmas, and bought six head of Hereford cattle. They all have white faces. They look very nice.

Mt. Carroll, Ill., Jan. 8, 1885.

JOHN ROHRER.

"PUT MY PAPA DOWN IN BLASTED HOPES."

Put my papa down in Blasted Hopes. Two years ago we had 100 swarms, and now he has just two left. My grandpa Bennett takes GLEANINGS, and I like to read the letters from the little boys and girls. I am going to save up my money until I get enough for grandpa to send for me a watch.

Alexandria, Minn.

TOMMY COWING, age 10.

HOW TO COLLECT INSECTS.

I am making a collection of butterflies and bugs. I have made one, and now I am making another. The way I make them, I take a box with a thin bottom, and drive pins up through, about one inch apart. When I get the butterflies and bugs I kill them, and put them on the pins, and it makes a real

pretty collection. My brother takes GLEANINGS, and I like to read the letters from little folks.

NETTIE H. CRANSTON, age 10.

Woodstock, Champaign Co., O., Sept. 19, 1885.

All right, friend Nettie; but whatever you do, don't be cruel to the poor butterflies and bugs. If it is necessary to kill them, do it with chloroform, or in some similar way, so as to avoid giving them pain, or torturing the poor things needlessly. Prof. Cook recently told us how he kills bugs and insects.

LIZZIE'S LETTER.

My little sister wrote you a letter to-day, and I thought I would try to write one; but I don't know how to word a letter. Papa told me to tell you that he had 156 stands of bees. He sold 31 stands for \$156, and he sold lots of Italian queens. I am a little girl, and can't do much but go to school and play.

LIZZIE PEER, age 7.

Ellismond, Ill.

SOMETHING FROM FLORIDA—FISH, OYSTERS, AND BEES.

We have lots of fish and oysters down here. I think that you had better come down here and get some. The bees have not done well this summer. We have three hives of bees; we got a small barrel of honey from our bees.

EVA S. GLAWSON.

Hawk's Park, Florida.

PUTTING BEES UP STAIRS FOR WINTER—RESULTS.

My father has 15 stands of bees. I have one stand. Father put one stand of bees up stairs to feed it, and it got too hot for them up there, and he brought it down and let them fly, and did not put it up again, and it starved to death. Another one died and he took out the honey and weighed it. It weighed about 40 lbs.

GEORGE E. GILSON, age 12.
Westchester, Ind.

HOW PAPA WINTERED A SWARM ABOVE THE COAL-STOVE.

My papa keeps a few bees. He commenced last spring with four colonies; increased to ten; we got only 61 lbs. of honey. Two colonies have died during the winter. My papa took one colony up stairs in a room above the coal-stove, to experiment, and darkened the room. They wintered very nicely, and he thinks it is a good way to winter bees.

Burlington, Pa. EDWIN E. MERRING, age 10.

DID OUR BEES DIE BECAUSE OF MOLDY COMES?

My brothers Jasper and Philip keep bees; they bought three hives of Italians last summer, and they had six swarms from them; they put them into the cellar after snow and frost had come. The comb got moldy. They had plenty of honey. They all died but two swarms. Do you think they died from the comb being moldy? My brother takes GLEANINGS. I like to read the little letters.

Hassan, Minn. GEORGE S. TUCKER.

A LITTLE GIRL WHOSE SISTERS HAVE EACH A STAND OF BEES, BUT NONE HERSELF.

I don't like honey very well, but I like to see the bees gather it. I have five sisters, and they have a stand of bees apiece, but I haven't any. Pa takes your journal. I like to get it and read it.

Glidden, Ia.

ZELLA EPPERT.

I think our papas ought to give each of the juveniles a swarm of bees by themselves. That would enkindle a new interest, and then what nice little letters we would have, all about bees! Mr. Hutchinson's little girls.

as he told you, have each a little swarm; and Blue Eyes, you know, had the biggest swarm in the apiary. When Huber gets big enough he shall have a swarm. Perhaps your papa is waiting till you get big enough too.

THREE HUNDRED STANDS OF BEES; A LITTLE GIRL WHO MAKES HERSELF USEFUL.

We have about 300 stands of bees. We haven't taken any honey since the last of July, as our honey-crop is poor this year. I helped pa with the bees, and liked it very well. He says he can't do without me in the honey-season. We have Plymouth Rock and Brahma chickens. Ma likes the Brahmas, and pa likes the Plymouth Rocks.

LALLA L. MARTIN, age 11.

Benton, Bossier Par., La., Sept. 24, 1885.

Well, Lalla, we have the Brahmas and Plymouth Rocks too, but I rather think I like the Brahmas better, so your mamma and I would agree on that point.

A PET FAWN.

Mr. Godkins, our neighbor, has a little deer. It is a year old. It wears a red ribbon with a bell on it. They caught it in the lumber-woods. He gave ten dollars for it, and he would not take fifty for it now. They feed it cookies, cake, pie, crackers, fried-cakes, bread and milk, and milk to drink. It is very tame; it comes to our house, over half a mile, and our dog scares it home. It is a grayish color.

JAMES W. RUSSELL, age 11.

Gilford, Mich.

A SWARM OF BEES FOUND UPON A WIRE FENCE: HOW THEY WERE HIVED AND WINTERED.

Two years ago my sister and I were gathering flowers, and we saw a swarm of bees on the wire fence. We went and told pa, and he got an old tea-box and put them in. They swarmed that summer, and pa put them into a chaff hive. We wintered them by turning a fifteen-bushel box down over the tea-box. They wintered well last winter. They have plenty of honey, and but few died. We had over 60 lbs. of surplus honey.

Radcliffe, Iowa. CLYDE WOODWARD, age 10.

BREAD AND HONEY, VERSUS SKATING.

I like to read the letters from the boys, so I thought I would write one. Papa keeps about 50 swarms of bees, and manufactures a chaff bee-hive, and sells a good many. He buys lots of things of you. We got about a ton of comb honey last year. My brother and I had one swarm which we owned together; but on account of the hard cold winter we lost them.

They are just finishing a roller skating-rink, about 60 rods from our house; but papa has bought his boys off by giving us a dollar apiece, so we are going to take the dollars and buy us some more bees; so when the rest are breaking their noses at the rink, we will eat bread and honey in the parlor.

CHARLIE B. HUMASON.

Vienna, Ohio.

Friend Charlie, your papa and I, I think, must be about of a mind. The effect of skating-rinks in our vicinity has been almost altogether bad, and I do think parents ought to try very hard to interest children in something at home—at least in places where they will not meet and be on a footing with the lowest and most depraved minds.

AN ESSAY ON BEES.

Bees are very industrious little insects. They gather honey every sunshiny day in the summer, and on cloudy days they make wax. They gather honey from clover-blossoms, and almost every kind of flowers. Bees will not sting if you do not molest them. Their color is brown and yellow. They are a little larger than the common house-fly. They kill all the drones when winter comes. I live in the western part of Iowa. Here the bees get honey from wild flowers, and I think from dogwood flowers. I should think bees would like columbine-blossoms.

MAY DREW.

Glidden, Ia.

Your essay is very good, friend May, but I am afraid it is not all of it altogether true. Bees do make wax on cloudy days, but I am not sure that they make it then more than they do on sunny days; and I am afraid it is not always true, that bees do not sting unless you molest them. It is a pretty good letter, though, for all that.

A JUVENILE SUPPLY-DEALER.

Mr. Daniel Howard came to pa's house, and stayed three or four months, and gave me one of your catalogues. I am a small boy; and as all boys like to have some pocket change, I spoke of sending to you for a few articles and selling them at a small profit, and, by so doing, turn my little mite over to advantage. My first attempt was rather discouraging; but your kindness reassured me.

My father is a planter on the Ouachita River. He owns 600 acres on the river, of as good land as is in the State. He owns a steam-gin and grist-mill. His steam-power is sufficient for a saw, and his uncultivated lands are covered with splendid timber. It is as healthy as any place in the South. He has three nice settlements on his land, and pa wishes to go north. If you see any one who wishes a cheap bargain in a healthy neighborhood, good schools, nice people, recommend them to pa. He will sell at very reasonable figures.

WILLIE RUSSELL.

Donaldson, Hot Spring Co., Ark., Sept. 14, 1885.

SOME KIND WORDS, AND FACTS OF GENERAL INTEREST.

My papa takes GLEANINGS, and likes it so well that when his six months is up he will take it all the time. We started in with six colonies, and this spring one was alive. We got two nice large swarms, and they have done well. We got 32 lbs. of nice white comb honey. We have 12 spider plants, to give the bees a trial, and they won't touch it. What is the reason? We can just see the little drops of nectar in each flower. Mr. Root, do you give smokers yet? If you do, please send my papa one. He has quit chewing and smoking. If he chews or smokes we will send you money for it. We like the way you talk in the A B C introduction. Papa says he thinks you are a Christian. We like that kind of God-fearing people. Brother and I both belong to the church. I will close, for fear you toss this into the waste-basket.

CLARENCE and HARRY BOONE, ages 11 and 9.

Shelbyville, Ills.

May God bless you, Clarence and Harry! and most gladly do we send your papa a smoker. What papa could break his pledge when two of his boys, aged nine and eleven, stand as vouchers for the faithful performance of his part of the contract?—The bees neglect your spider plants because they are

getting plenty of honey somewhere else. Am I not right about it, boys?

SOME KIND WORDS FROM A JUVENILE.

We all look for your paper, which comes regularly. Papa says he wonders how you do it. We are all sorry you lost your horse. We were pleased with your article about paying a fair price for what you buy. Pa read it all out for us, for people often call him foolish because he won't beat a man down when he asks a fair price for what he sells. I help papa with his bees. We lost none last winter. March, 1884, we began with four boxes. Now we have 15 hives. Papa is an engineer. He makes his own hives. We want him to succeed with his bees. He is not strong, and has bad health. We wish we could taste some of those apples, strawberries, and raspberries you write about. We can not grow any of them here. Papa planted lots of trees. None of us use tobacco, except my eldest brother; he thinks he looks like a man.

FREDERICK HAYLES, age 12.

Hondo City, Texas, Sept., 1885.

Why, Frederick, is it indeed true that you can not raise apples, strawberries, and raspberries, in Texas? Are you not mistaken about this? It seems to me I could make them grow wherever it is not too cold or too hot.

KIND WORDS FROM A LITTLE GIRL WHO DOES NOT FEEL THAT SHE IS A STRANGER.

I know I am a little stranger to you, but I don't feel as if you were one to me, because I have seen so many of your kind replies to little letters in GLEANINGS that it made me feel as if I wanted to hear from you too. My mamma says she thinks that you are a man with a great deal of patience to answer all the little letters from children. I don't know of any thing that I could tell you about bees that you don't already know, for I often ask my papa if he doesn't think that you know every thing about bees. My papa doesn't use tobacco in any form. There was a very serious case happened to a man who lived in our neighborhood who did use tobacco. He was going from the store, and a hard breeze came just as he was going through the gate, which slammed and drove the pipe-stem down his throat, and he nearly died before they could get him home, but I am glad to say that he is better. My papa has been keeping bees three years; he began with one hive of black bees in a box hive and one nucleus that he got from you. He now has nearly 50 hives of bees. I have a little book called "First Steps for Little Feet," and I have read it through now, and I think that it is just elegant.

Church Creek, Md. ELIZA R. BUSICK, age 8.

Thank you, Eliza, for your kind little letter. You need not be a stranger any longer, for I always feel at least some acquainted with every one who writes for GLEANINGS. A great many of the children are calling for the book you speak of—"First Steps for Little Feet," and I have just decided to buy a whole hundred dollar's worth at one time, so my little friends can all be supplied. The best thing about the little book is, that it teaches even the little feet to step toward heaven. Your sad story may not teach very much of a lesson against tobacco, but it does teach people to beware of going about with something sticking out of their mouth.

TOBACCO COLUMN.

WHAT A FRIEND CAN DO.

SINCE I have quit smoking myself, I have been trying to induce others to do so; and with your help I have succeeded in getting two, one of whom is Mr. Yandy, who has already received a smoker from you; the other is Mr. W. A. Smith. He wants a smoker also, and promises that if ever he uses tobacco again he will send you the price of the smoker. I can vouch for him myself, as he is a perfect gentleman.

Stanton, Ala.

C. W. PLANT.

You have struck the right way to strengthen yourself against tobacco -- go to doing missionary work among your friends. Why, it fairly makes my heart bound to think of the reformed tobacco-users working among their own friends, in the field where God has placed them, to get others to go and do likewise. Keep on in the good work, and God will help me to furnish all the smokers that may be needed to carry it on. Perhaps it may be well to add, that it will be well to keep a sort of brotherly watch over all these new converts, and see that they do not backslide. Let all the work be truthful, honest, and fair, or we can not, of course, expect God to bless us.

ONE WHO HAS BEEN A SLAVE FOR 22 YEARS, AND HOW HE GOT FREE.

I notice your offer to send any one who quits tobacco, a smoker. I used tobacco for 22 years, and was a regular slave to the use of the weed to such an extent it nearly prostrated my nervous system. On the first day of January, 1884, I resolved to quit for that day. That night I resolved to quit a week; at the end of a week I concluded to quit for all time. It is now nearly 20 months since I have used tobacco in any form. I am very much improved in general health; my pocket-book is much plumper, etc. I have never had any bees until this summer, and consequently had no use for a smoker. Should you send me one now, I will pledge you my word of honor, that should I ever begin the habit again, I will pay you in full the price of the same.

Carroll, Ind.

R. T. BARBER.

ONE WHO HAS USED TOBACCO 34 YEARS.

I have been using tobacco for thirty years, but have decided not to use it again. I have not used any for two years, and have no desire for it. I notice in GLEANINGS you give a smoker to those who quit. If you think me worthy of a smoker, send it; and if I commence to use it again I will send you one dollar to pay for the smoker.

Colfax, N. C.

JAMES A. GATES.

GOOD BAPTISTS CAN NOT USE TOBACCO.

Your card received, and contents noted. Upon your explanation, I can not claim the smoker, as your offer was not my motive. The reason I quit was, I am a Baptist; and good Baptists can not use tobacco.

O. P. STARK, M. D.

Valley Spring, Texas.

Why, God bless you, friend S., for putting it in that way. To be sure, it is not right for a Baptist to use tobacco; and if it were not for treading on somebody's toes, I should like to say that it does not seem to me as if a Methodist, or an Episcopalian, or a Disciple, or a Congregationalist, or any of the rest of them, can consistently use tobacco.

If any of these good brothers think I am carrying it too far, I would ask them to read the Scripture texts in our little book, entitled "A Dose of Truth." And, by the way, I will send this book free to any Christian of any denomination, who has been deliberating in his own mind whether he should or should not use tobacco.

I have given up the use of tobacco, and would like you to send me a smoker. I don't want to be paid for doing right, but it will help me to keep my pledge by having a smoker to pay for the first time I break said pledge.

REESE POWELL.

Mineral Point, Wis.

Why, Reese, is this you among the tobacco-converts? We did not know before that you used tobacco at all; but we are very glad to know that you have given it up. Our book-keepers have mentioned your name to me from time to time, and I have always told them that I was pretty sure you meant to be a good boy, and to do what is right. Since you have given up tobacco, I can feel still more confidence in putting in a plea for you whenever it shall be necessary.

IT SAVED ME DOLLARS.

Please receive my thanks for the good deed you did for me when you sent me the smoker, to stop the use of tobacco. It has saved me dollars, and I don't want smoking going on around me at all now. I will love you as long as I live to love anybody.

Sun Hill, Washington Co., Ga.

A. JOINER.

Why, friend J., you almost startle me. Is it really possible, that I have been gaining friends, and doing it, too, when I was not aware of it? Here again is an illustration of that little text, "Lord, when saw we thee a hungered, and fed thee? or thirsty, and gave thee drink?" etc. Remember, dear friend J., that I am only human, and sometimes I fear my friends think me most *sadly* human. You will probably be tried with me, sooner or later. Now, then, won't you just lay up a good store of charity while you feel like it, to be used when that time comes? And one more thing: If I did you a good service, will you not pass it right on to the next man, and get him to stop using tobacco in the way I induced you to stop? Whenever smokers are needed for the work, let me know, and I will furnish them -- providing, of course, the one who receives the smoker gives the usual promise, and is willing that his name should be published.

TWO LADIES WHO HAVE GIVEN UP TOBACCO.

As one of my lady friends has received a very pretty as well as useful present for giving up tobacco, I thought I was entitled to one for the same purpose. I quit using tobacco two years ago, and I never expect to renew the filthy habit. Having used it for many years I found it to be a very unnecessary habit.

SALLIE DAVIDSON.

Poca, West Virginia.

About two months ago I quit the use of tobacco, which I have used 12 years. Most of the time I chewed and smoked. I shall never use it any more. If you send me a smoker I will call it one more favor. In case I should ever use it again, I will send you pay for it.

J. O. MUNSON.

Peruville, N. Y.

OUR HOMES.

Charity thinketh no evil; hopeth all things; endureth all things.—1. COR. 13.

ARRIVING at my destination I climbed down from the locomotive (see page 708), and found I had over two hours to wait for the New-York train. I had had my dinner, as explained, and there was nothing to do; that is, I had no work planned for these two hours. Then came the question, What could I find to do that would be most profitable to myself and most profitable for you, dear readers? for I consider myself in one sense as your servant: for it was with the money that you have so freely furnished me that I had started on this errand. How could I benefit you most? The answer came, By educating myself in every possible way to minister to your wants and wishes. A saloon near at hand was doing a lively business, and was noisy with traffic; but I did not feel called there. In another direction was a wrench-factory, where busy wheels could be seen through the open windows, and I caught a glimpse of human beings also at work. I knew they made very nice goods there, for an adjustable wrench of their make is now on our 25-cent counter. Notwithstanding my experience with the engineer, mentioned in *Our Neighbors*, the old feeling of diffidence came up, and I didn't quite know whether they would want to be bothered with me or not, and I was thinking of going in one of the back doors around near the engine, and walking around without telling anybody who I was. Pretty soon I felt ashamed of myself, however, and mustered up courage enough to march right into the office. I handed my card to the book-keeper, telling him that I had two hours to wait, and that I should like to go over their neat-looking factory. Now it is an honest truth, dear friends, that I did not think of any further courtesy being shown to me, than that he would stop long enough to give me the asked-for permission. What did he do? Why, he opened the door and told me to come inside behind the railing. Then he told the partners who were present who I was, and they all rose up and shook me warmly by the hand, and expressed much surprise and pleasure to find that A. I. Root had really got away from home long enough to pay them a visit. One of the firm not only showed me all over the factory, and explained every thing to me in the kindest way, but he took me all over their little town, and showed me everything that I expressed an interest in. Thus the time passed very pleasantly until the train was nearly due.

While thinking of my want of charity for my fellow-men in that little transaction, I am reminded that quite a number of visitors have come to see us, and perhaps gone over our factory and grounds, and I did not know, until they were gone, that it was some friend with whom I had had deal, and whom I should have been very glad to meet. Like myself, they hesitated about bothering me, after I have said so much about being "exceedingly busy," "overworked," etc. Now

I will tell you how I feel about it. I am really glad to have visitors express a wish to see me; in fact, I would much rather that they would all come up into the office, and tell me who they are, and what they would like. Of course, it is oftentimes the case that some one of our clerks can wait on them better than I can. But I like to have them come up into the office, because then when I see them around I know who they are, and they know who I am. Why, I felt ever so much happier to be around with one of the proprietors, than if I had gone in the back way, not knowing whether I was wanted around there or not. Getting permission from the office is right and proper, when you go into any establishment; and if you want to look over an orchard, garden, or farm, *by all means* get permission to do so from the proprietor. It is well to be modest and humble, and perhaps a little backward about intruding; but one may carry this too far, and I am sure my tendency is almost always that way. I am apt to be lacking in that part of our text about hopefulness. A genuine Christian is not often an intruder, and he ought to have hopefulness enough to believe that people will be glad to see him, when he is away from home.

Mr. Holmes told me to get a seat in a palace car at once, and that the extra expense would be \$3.00 to New York. The conductor charged me \$3.50. Forgetting my lesson, I straightway made up my mind that he was one of that kind of conductors that we sometimes read about, who overcharge and put the remainder in their own pockets. He looked like a nice man, but this only set me to moralizing how little we can tell about a man by his looks. I thought I would not argue the case for a paltry half-dollar; but it began to sour me toward my fellow-men. Toward night he came and sat down by me, with some change in his hand. After a few pleasant remarks about the weather, etc., he extended the change, saying, "I owe you an apology, friend, for having taken a half-dollar too much from you, because I looked at the wrong column of figures."

Then I felt ashamed of myself again. "Thinketh no evil." Did that fit me? Not very well; and yet I make Christianity my theme. I shook off my uncharitable feelings, as it were, and asked him some questions about the way they manage to avoid mistakes, etc. He surprised me by very kindly and intelligently explaining the whole matter to me.

"Why, my dear sir, we *ought* to be correct and straight every time; and if we are not, we soon get *straightened*, I tell you. See here—I have punched the figures out of the check I gave you, representing the money received. This check goes to headquarters, with the holes all punched as you see, and there is no way in the world I can cover up this mistake. I have got to own it up, and make an explanation. See—I have made a ring around the place where I punched by mistake, to indicate at headquarters the blunder I made, and I feel a great deal more ashamed of it than I can tell you."

Now, this information has been worth a good deal to me. I didn't understand before why this system of checks and tickets, with punches for perforating them, was so much in use everywhere. It is for the purpose of making dishonesty almost impossible, providing the man who travels is intelligent enough to keep posted and understand it all. To make mistakes, whether intentional or unintentional, is almost impossible; that is, if the traveling public do their duty. And here I was *ignorant* and *uncharitable*. You see, I was learning lessons. We sometimes think the world is slow to receive lessons; but we generally think that we ourselves are bright and smart. In some respects I have a very good opinion indeed of myself. With these experiences that I have told you of, I ought to have had plenty of charity. Well, I guess I ought, but I didn't have, after all.

The first place I stopped at in the great city was at the office of the *American Grocer*, the publisher being brother of our short-hand writer who is taking down these notes. It was the same way. I felt diffident about intruding on his time, but I felt ashamed almost as soon as I met him. It was the same when I visited the great establishment of Thurber, Whyland & Co. I will tell you something about that visit in another place. After that I visited the large establishment where I buy the greater part of our counter goods. One of the clerks was somewhat acquainted by correspondence, because he made it his business to take charge of all our orders. Well, what kind of opinion do you suppose I had of him, without having ever seen him? To get at the truth which I want to inculcate to-day, I suppose I shall have to own up a good deal. Some way I had got it into my mind that most of the clerks in our great cities are of a drinking, swearing, theater-going class; that most of them would laugh at me, and call me a fanatic or religious enthusiast. Well, my reception by the clerks of this great establishment was a good deal like the rest I have been telling you about. They were quite overjoyed to see the man in New York who had a plain notice on one corner of his catalogue, saying that he gives away cards against profanity, to anybody who would take them. This brought out the fact that my friend was a Sunday-school worker — one who loved God, and hungered and thirsted after righteousness. You know we sell quite a number of books. Well, this establishment had a book department; that is, they sold a few select books. When they asked me to make a purchase of some books, and I ordered only a hundred *Pilgrim's Progress*, and no others, the clerks seemed a little surprised when I replied, "Boys, we sell only a limited number of books, and I have decided that these must be of such a character that I can carry them to the prisoners in our county jail to read, with a clear conscience."

Now, I did not think by this little speech that I was going to hurt anybody's feelings; but the clerk who made it a business to purchase their books made a start, and I could tell by his face and voice that he was hurt.

"Why, Mr. Root," said he, "are there any

books among our collections here that are in the least immoral in their tendencies?"

I assured him that I did not quite mean that; but the talk I had with him on the matter made me feel ashamed of myself again; and when these two young men, a little while later, introduced me to one of the partners, while their faces seemed to show they did it with considerable pride, I felt ashamed of myself again. One of them made a remark something like this:

"Mr. B., this is Mr. A. I. Root, who advertises printed cards against profanity, to give away; and at home where he lives he goes into the jail every Sunday and talks to the boys and men he finds there," etc.

I had a very pleasant talk with the proprietor; and while I was making my purchases, a clerk came to tell me that they wanted to see me in the office before I went away. When I went in there to see what was wanted, one of the firm came to me with a little bit of paper in his hand, and with a smile on his face, and said about as follows: "Mr. Root, I have had one of our book-keepers run up the amount of your purchases since you commenced to trade with us in 1880. Here it is on this bit of paper. We have sold you, in a little less than five years, \$4392.24. Now, that is a pretty fair amount to sell to one man in that length of time; but that is not the point just now, although we thank you for the trade you have given us. What I wanted to say for your encouragement is this: That, during these five years, we have never had to ask you for a cent of money, or hardly to send you a statement. Every bill has been paid promptly, within about ten days of its date."

"But," said I, "you gave a discount for prompt cash, and who would not pay under such circumstances?"

He replied, "Yes, I know we gave a discount; but I tell you, Mr. Root, the men who pay as promptly as you do, are not so plentiful but that when we find such a customer we want to keep him. Now, while I thank you, I want to say this: We know you buy largely in certain lines of goods; and we have learned by experience that we can safely give you close figures. We take no risk in getting our pay. Whenever you are in need of any article, whether we keep it or not, we will take pleasure in hunting it up for you, and in giving you prices that we could not give people whom we have found to be uncertain. Why, Mr. Root, you have no idea of how we are troubled and perplexed and bothered by men who make promises they do not keep or can not keep."

Now, dear friends, do not think I have told you all this because I want to boast of my good name in financial circles, but because I want to let you have the benefit of the moral. Has any one any adequate idea of the value of a good name? and are we working as we might work, even the best of us, to keep this good name free from blemish? It was another illustration to me of my want of charity. I didn't know that these people would be particularly glad to see me, and I had no conception of the estimation in which they held one who is

working for Christ. No matter what a man's religious belief is, he respects at once the one who loves God and his fellow-men.

You may think that my heart should have been enlarging a little by this time, and that these experiences should have taught me to have more faith in my fellow-men. Well, I believe I did begin to have a little better opinion of the world; but when I stepped into the great seed-house of Peter Henderson & Co., something of the same feeling came over me. In New York, space is so valuable that even large houses can not afford such roomy and airy offices as ours are here at the "Home of the Honey-Bees." In all these places I visited, every foot of space was economized, as if it were precious. A good deal of the ground in the city of New York, I have been told, is worth a thousand dollars a square foot. The offices were somewhat small where Mr. Henderson has his book-keepers, but somehow I felt a little backward about going in and interrupting so many busy people, especially when I didn't want any thing, so to speak. One of the clerks told me that Mr. Henderson was very busy, and he didn't know that Mr. H. would want to be interrupted. Perhaps I should remark, that it was Peter Henderson's son whom I found in the office that day. He was very busy with several people, and seemed greatly annoyed because some valuable paper was lost—so much so that I thought about going away without disturbing him. This wouldn't do, however, and so I mentioned my name, and told him where I came from. In an instant the troubled look on his face gave way to kindly looks. He gave up his paper, dismissed his friends, and with great kindness showed me from garret to cellar of that great seed-house. As I did not come to trade at this season of the year, I felt sorry to see him turn off other people whom I presumed must want something, so I did not stay very long at the store. I will tell you about my visit to the eight acres of greenhouses further along. I have spoken of the friends in New York who knew of me, and now I want to say a word in regard to utter strangers.

When I first came in sight of North River, at the terminus of our railroad, I was greatly astonished at the number of vessels, steamers, ferries, tugs, and many crafts that I could not tell the name of, and to see the way in which they crowded and rushed about in every direction, without smashing into each other. They seemed like mosquitoes dancing in the sunshine, only it was plainly evident there was no play about it. It was the busiest kind of business. Every craft was pushing for dear life toward some point ahead. Human beings were doing the same thing on the ferry-boat, although they did stand still until we neared the city wharf. Then out they poured into the streets. If I was astonished at the scene on the water, I was still more astonished at the streets of New York. Street-cars were chasing each other up one side of the street and down the other; carriages, carts, drays, milk-wagons, and all sorts of vehicles, were smashing ahead, crosswise, lengthwise, and turning and twisting. At almost every turn

it seemed to me that some vehicle narrowly escaped a smashup; but as these narrow escapes were before my eyes all the while, I was obliged to conclude that was the way they always did. Perhaps you have heard of the Irishman, who, when he first landed on our shores, was knocked down by a thunderbolt. When he got up, the first thing he asked was whether it did that way in America every day; for if it did, he thought he would get aboard the ship and go back straight home. This feeling kept coming up to me all the while, but I thought I would not go back home just yet. In addition to the annoyances and confusion on the pavements, the elevated railways overhead were continually scaring what little sense one had left, out of him. They, too, went down one side and up the other, chasing each other like children about the room. On some of the streets, four tracks ran side by side on these elevated street railways. I thought I was bright enough to take care of myself, and keep out of the way; but every little while somebody would kindly take me by the arm and pull me this way and then that way, to keep me out of danger. While I was looking out for one vehicle, some one from another direction would be right on to me. I expected somebody to swear at me, or call me a fool, because I kept continually getting into places of danger. But they didn't; on the contrary, I received the utmost kindness everywhere. The conductor took hold of me, and pulled me into the car, when a street-car running in the opposite direction was pretty close. Everybody answered questions so kindly and so fully that I could not but thank God while I thanked them. Policemen, conductors, clerks at the hotels, and everybody else, seemed to take it for granted that their business in life was to make it just as pleasant for such chaps as myself as they knew how to do, and it surprised me. Dear friends, I am really afraid it is true, that we in the country are much more given to surliness and short answers than our fellows in these great busy cities. I saw saloons, but I saw very little drunkenness. One thing that pleased me was to see the number of neat notices, even at the saloons, announcing "Ice-Cold Milk, only 3 cents a Glass." At some places, it read, "Orange-County Milk." Then the old uncharitable feeling suggested that it was not Orange-County milk, and that it was perhaps chalk and water that we read about in the papers. My friends, the milk was just as nice as that we get from our Jersey cow at home; and if one is short of means he can live very cheaply, even in this great busy booming city. I spent one evening there. I had forgotten to ask my friends where I could go in the evening, to a place fit for a Christian to go, and so I consulted the papers at the hotel. There were plenty of theaters, but, of course, that was not the place for me. So I thought I would study humanity on the streets. Well, I went miles on the street-cars and on foot, in different directions, and pushed my way into the crowds, but every thing was quiet and orderly. Why, it seemed to me like one great family circle. Children were playing

around under the light of the electric lamps, and on one street, where it was not very busy, a company of juveniles played "training-day," and a great crowd of ragged little ones, some no larger than Huber, followed a life and drum. But no one was hurt, and none were uncivil. I did not even hear bad words. One woman was arrested for drunkenness; and a great gaping crowd elbowed and tiptoed for a little time to see what the excitement was. The sight of her besotted face, however, soon satisfied them, as it did myself, and she was taken away in comparative quietness.

On Wall Street I saw the statue of the father of our country, and with uncovered head I stepped on the stone where he stood when he took the oath of allegiance. A little distance on, in Printing-House Square, I saw the statue of Benjamin Franklin.

With friend Root, of the *American Grocer*, I visited the New-York Postoffice, and had a glimpse behind the scenes. It does seem too bad that the clerks must do their work in a dusty and smoky atmosphere, lighted, even in the day time, by electric lights.

I crossed the great bridge that spans the East River, where the tallest-masted vessels sail under its immense arch, with plenty of room. It took us twenty minutes of fast walking to go across. Friend Root told me that it took fourteen years to build this great wonder, if not the greatest wonder, of the world; and for fourteen years he watched its progress as he went to and from his place of business. You pay one cent to go across on foot, or two cents to ride across, drawn by an endless cable and a cable that is always in motion. I told him, that in spite of all that has been said about seeing God through his works in the country, it seemed to me that God's finger was more plainly seen in the mighty works of the city than even in the country. He said he had often felt the same thing and agreed with me.

Now, then, comes pretty nearly my last visit, and most important to me of all—or, at least, the errand which called me to New York—the visit to Peter Henderson's greenhouses and grounds. The book-keeper at the seed-store gave me a pretty card, with full directions for reaching the greenhouses. This is a pleasant and convenient arrangement: for it indicates to any one who wishes to call, that they make a regular business of receiving visitors. The greenhouses were all that Henderson's catalogue represents them to be, and they do actually cover 8 acres. But I was a good deal disappointed to find that they are all used for raising flowers—nothing for vegetables and garden stuffs, unless it be one greenhouse for testing seeds. The grounds outdoors were also all devoted to raising flowers—nothing to gardening, unless it be one small piece devoted to strawberries and raising strawberry-plants, and a little patch of celery. Market gardens are all round about Henderson's grounds; but Peter Henderson, who has for so many years been looked upon as the most progressive market gardener of the world, is a market gardener no longer. I suppose flowers are more profitable. By the way, the only opportunity I had of seeing Peter

Henderson himself was at the rooms of the New-York Horticultural Institute, where a sale of orchids was going on. The young Mr. Henderson informed me that over \$10,000 worth of orchids was to be sold at auction, and that his father was very much interested in them. The display was weird and wonderful, and the strange blossoms made one feel queer to look at them. How did all this come about? and what purpose has Dame Nature in sporting in such strange, fantastic ways? While I stood there, a dried-up plant in a little bit of flower-pot was sold for \$100; and had anybody offered it to me I would not have carried it home for it. But, of course, all this was entirely out of my line. The study of these wonderful plants is certainly an innocent pastime, and we have no right to find fault with those who invest so much money in them, so long as the money is honestly their own, and they can afford it. I suppose if my wife and daughter had been with me as I passed through these great greenhouses they would have gone into ecstasies over the great beds of roses. They were pretty, of course; but the sight of a bed of lettuce that I saw a little later was worth ever so much more to me. In fact, one glimpse that I caught out of the street-car window, of a celery-plantation, was worth to me the whole trip to New York. There were about 15 acres in the lot. The rows were as straight as a line. Each celery-plant was so exactly like every other one, that there was practically no difference anywhere in the field of 15 acres. Every plant possessed that wonderful vivid green that indicates rank growth, such as we want in celery; and if there was a shriveled or wilted leaf in the whole field, I did not see it, although it was during quite a drought. The land on which it grew was valued at so high a figure that the owner informed me that he paid a yearly tax of \$100 an acre. He was a blunt, rough specimen of an English gardener, but a very successful one, so Henderson's people told me. When I first approached him he did not seem inclined to give me much attention, or to appear very civil. After I had talked with him a little, however, he dropped his work and jumped up with the alacrity of a schoolboy. Six large greenhouses were in process of construction, and nearly finished, solely for growing vegetables. When he found that I was deeply interested, and pretty well posted, he was exceedingly talkative, and told me some of his troubles, because some of the men wouldn't push his work along as his own trained gardeners were in the habit of doing things. He used a string of oaths while he talked with me, but seemed good-natured and friendly, even if he did. Time was too valuable for me, and probably for him, to enter into any discussion; but I made up my mind, that before I left I would try at least some gentle reproof. I made some suggestions in regard to his greenhouses, which were new to him, and he thanked me profusely, and begged me to call again to see how they worked when they got them filled with plants. I told him that I was quite sure they would work.

"Mr. Root," said he, "we are not really sure of any thing; they may work, and they may not. There are only two things in this world that are sure."

"And what are the two things that are absolutely sure, Mr. H.?"

"Death and taxes. They are sure to come to all of us."

"I agree with you, my friend. These two things *are* sure; and in view of the fact that there is no escape from them, does it not become us to be careful, *very* careful, that we are always ready to meet either?"

He gave me a quick look, as if he were not quite sure whether I was one of the pious kind or not, but I went on:

"Every good business man ought always to be ready to meet the payment of his taxes when they become due, ought he not?"

"Yes, sir, to be sure, he ought."

"Now, my good friend, you have been very kind to me this afternoon, and I thank you. I may never meet you again, and may never have the opportunity of repaying your kindness; but do, I beseech you, be as ready to meet death when God shall call us home, as you have been in life to meet the payment of every just debt. I have been told that you are a successful and responsible man. Don't forget this other thing besides taxes that must be met."

His countenance softened, and he looked as though he was touched.

"I know, I know," said he, "that we are not often as ready to meet death as the other; and I know, too, Mr. Root, that we ought to be."

I did not say a word about his swearing, but he understood it all the same; and I was sure, by the warmth with which he took my hand, that he was not at all displeased. He had no feeling that I had been preaching to him. As I passed away I gave another longing look at the lettuce-beds. Some of his men were transplanting some of the bright-green little plants. I noticed, that as soon as they put them out, a board shutter instead of a sash was placed over them to keep off the sun. Other men were packing the beautiful heads of lettuce in barrels. One of Mr. Hudson's neighbors (for that was his name) told me there was a spell during the past season when New York was almost destitute of lettuce. The demand became so great that Mr. H. sold almost his whole crop as high as six cents a head, and with the proceeds he got at least a part of the money to build these six green-houses, all to be heated by one boiler. There before my eyes was the sight I had gone clear to New York to see — plants growing with wonderful vigor, and that, too, right at the time when we here in Ohio, and over a great part of the United States, are letting every thing go to weeds and decay; and besides that, preparations for having this wonderful growth go on uninterruptedly all winter long. You may say, "Oh, yes! that will do very well for such a market as New York." But, my friends, I am inclined to think those beautiful heads of lettuce that Mr. Hudson's men were pulling and putting into barrels would sell in your town or mine for at least five cents a head, at almost any

time during the coming winter, and perhaps even now before winter has come.

T. B. TERRY'S TOOL-HOUSE.

SOMETHING ABOUT TAKING CARE OF TOOLS IN GENERAL.

THE friends will remember, that in our issue for Sept. 15 I gave a promise of having an engraving made, and here it is. When I first looked about friend Terry's premises, this tool-house was about the first thing that attracted my eye. One of the doors was open, so that I could get a glimpse inside, and I caught the idea at once. I was the better prepared to appreciate it, because I had a similar tool-house constructed about a year ago, only mine was a lean-to shed, put up against the east side of our largest warehouse, and in ours the doors were omitted. The consequence was, the only way to get a tool in was to back in, and everybody found it so handy that pretty soon it was a half-day's work to get a tool out or in, and so the boys dropped back into the fashion of leaving all the vehicles scattered around where they were used last.

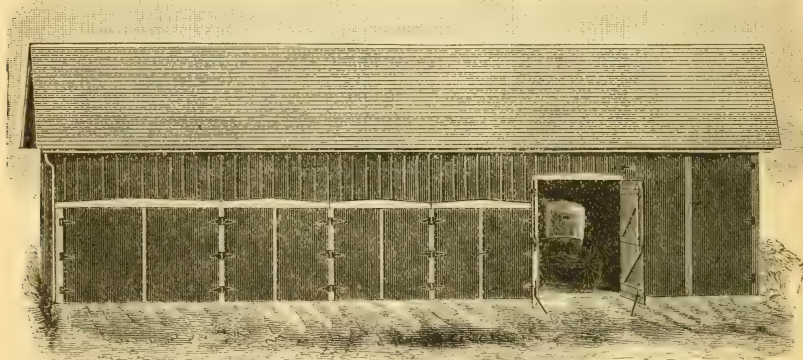
I remember one day of, wanting some little implement for just a little while, and a neighbor's reaper was so placed that it must be pulled out in the mud, in order to get the tool. We didn't make the gravel bed inside of the house, that friend Terry speaks of in his account further along; and the consequence was, that when the ground became quite soft the heavy tools sank into the heavy clay soil, and after a while they froze fast. Besides, some of our more enterprising chickens decided that it was nicer, and more airy a place in which to roost, and therefore they took up their quarters right over some of our high-priced machinery. Do you wonder I got the blues sometimes, and almost wished I had never tried to be a farmer? Come to think of it, I do not know, but I almost wished I had never tried to be anything or anybody. I thought of doors, but I remembered former experience in baying doors slammed by the wind until they were repeatedly torn from their hinges. Somebody suggested sliding-doors; but I also remembered sundry times when I tried to move heavy sliding-doors when I was in a hurry, when they went so hard that it took so much of my small amount of strength that I had neither strength nor energy to do the work after I got my tools out into the field. Well, Mr. Terry agrees with me in regard to sliding-doors; at least, he said he did not like them. He did not say he did not like to have doors slamming; but the moment I saw that little iron hand-spike with the eye on top, and hinged to the door, I knew what it was for. The other end is sharpened to a blunt point, so as to stick into the ground; but lest it go into the ground too far when said ground is too soft, a washer is shrunk on, as he describes. Then when this little hand-spike is not to be used, instead of having it flacking about, it is lifted up and laid on a nice little strong hook, prepared for the purpose. The en-

graver has forgotten to show this little hook, or did not see it.

That buggy, of which you can see only the back end, is so neat and clean that it made one think of silk dresses and Sunday, almost instinctively. The buggy is large enough to hold friend Terry's whole family, or almost any whole family; but for all that, it is a one-horse buggy. I didn't have to wonder *who* the horse (if you will pardon the expression) was very long, for pretty soon we found Mr. Terry with two immense horses, either one of which would take that buggy anywhere, whether said family occupied it or not. The horses were hitched to what I should call an enormous great stout wagon. I looked at the wagon, and then I looked at the horses, and I concluded they were all in keeping with each other. Pretty soon it occurred to me that one of the queer things about friend Terry and his horses is, that he never feeds them any grain—simply hay, and nothing else (unless, as some of his neighbors say, it is not hay, it is just dried

window in the west end right end in picture) below, east end up stairs, and one in the back side in the stairway, so it gives light both above and below. The floor above, of matched flooring, covers all but the two west bents; these are open clear up to the roof, as I will explain further on. The room up stairs is very handy for storing odds and ends, and our little folks think it just an A 1 skating-rink.

We used 12-foot posts, and made roof $1\frac{1}{2}$ pitch. The door-fastenings, shown in picture, are very neat and cheap. I would call particular attention to the irons for keeping the doors open, which are shown on doors that are open. They are simple $\frac{3}{4}$ -inch iron rods, with an eye in the upper end, with a staple through it. At the lower end they are sharp, and a piece of iron one inch by two and $\frac{1}{4}$ thick is shrunk on to keep them from going into the ground too far. When not in use they are laid up in a little hook inside of door. They will save doors by keeping them from slamming, and you will never have to hunt for a stick when you are in a hurry. All doors are fastened on the inside but one, which has a latch and lock. The lower floor is of dirt, or



TOOL-HOUSE BELONGING TO T. B. TERRY, OF HUDSON, O.

grass). Mr. Terry does not dispute with them, for he has his own notions about how grass ought to be dried, and his notions seem to agree well with the notions of the horses, for they were as pretty a team of heavy work-horses as I think I have ever looked on. Well, perhaps I have said enough now, and so I will let Mr. Terry describe the tool-house himself. If I am not mistaken, there will be more tool-houses built like it, somewhere where GLEANINGS goes.

DESCRIPTION OF TOOL-HOUSE.

The entire front is composed of doors, so as to make it as easy as possible to get tools in and out. The building is boarded up and down with 12-inch barn-boards, and tightly battened. The doors are made of matched flooring. Each door-post is set on a large stone going down into the ground some 3 feet, and a one-inch iron dowel put in post and stone, so they can not get out of place. The rest of the building is underpinned tightly, except under the doors, of course. It has a neat cornice, water-conductors, and three coats of paint. There is a

gravel, raised just enough so water will never run in, but not enough so but that you can easily get any tool in or out. I like a dirt floor best, as it is so easy to get tools in or out. Six inches gentle rise, sloping back some ten feet, is ample. The first pair of doors to the left are nearly 12 feet wide, so they will take in a low-down twine-binder, horse-rake, etc.

The next four pairs of doors are nearly 8 feet each, and the west pair nearly 12 feet. Opposite the latter are two doors in the rear, so we can drive in a load of hay or grain temporarily, and drive right out the other side. Also, we can leave binder, manure-spreader, or mowing-machine in there over night, when in use (by putting wagons on barn floor, and not take time to put up in its place. For this reason no floor was put on over this end. The west doors are full height of building. The next pair are about half way between these and the others, as you will notice. They are for top carriages.

At the rear of this department is a cupboard for carriage harnesses, where they can be kept nice and clean. The building is 22×56, and will just hold

every tool, wagon, and carriage on the farm without crowding. The tools, etc., were measured, and the building built to fit—no waste room. It is intended to have it join a new bank barn on the west, when we are able to build the same, with a door through into horse-stable of barn, which will be on same level.

The cost of the building, all neatly finished, was \$400 in cash, besides what we could do ourselves, without interfering with farm work. To say that we enjoy it greatly, and think it is one of the best investments we ever made, is needless.

The contents of building below, beginning at west end, are—2 large wagons; 1 top carriage; 1 open buggy; 2 potato-diggers (new this year); 2 Acme harrows; 2 Oliver chilled plows; 1 subsoil plow, Minor; 1 Thomas harrow; 1 perfected pulverizer; 1 potato-planter; 4 one-horse cultivators and horse-hoes; 1 two-horse sulky cultivator; 1 seeder attachment; 1 Cahoon hand-seeder; 1 roller; 1 manure-spreader; 1 low-down Buckeye twine-binder; 1 Eureka mower, 6-foot cutter-bar; 1 one-horse dump hay-rake; 1 sled.

Up stairs are stored sleigh, 3 horse pole, side-boards, Victor potato-coverer, etc. It addition to the above is the usual supply of little tools, stored where they can be got at handily, and it is quite possible some large ones which I have overlooked.

Hudson, Ohio.

T. B. TERRY.

Well, I have something more from friend Terry yet; and as it concerns, indirectly at least, the tool-house we have been talking about, I think I will put it in right here. For a head to the letter, I think we will say:

LENDING TOOLS TO NEIGHBORS.

Friend Root: It seems I do not always make myself fully understood. I did not intend to say, or have you think, that I had no neighbors who would use tools carefully, and return them promptly, and do the fair thing about paying for their use. I said I did not think it would answer to lend expensive tools. A single illustration will perhaps explain my meaning. Years ago I was fitting a piece of land for Hungarian grass. A farmer came to borrow my roller to roll in his Hungarian seed. He promised to have it back here by the time I got my ground ready. It did not come, for he let a careless man drive it (just as he would have done his own, if he had owned one, doubtless), who drove across a dead furrow with a large load of stone on, and smashed it all down. He got it fixed as soon as possible, but it was too late for me to use it on my crop. You see the point: My neighbor's ground was rolled, while mine had to go without. I owned the roller, and he got the use of it. He offered to pay me, but it cost him so much to repair it that I was ashamed to charge any thing. The loss to me was a good many dollars. It seemed as though this was loving my neighbor (particularly when he was worth ten times as much as I) better than myself, and I put my foot down then and there that I would not in the future make a business of lending expensive tools—or borrowing either. Any simple tool like a fork, or even a plow, I always gladly lend to any one in need; and if a neighbor should have the bad luck to break some expensive tool when the loss of its use would be a serious damage to him, I would lend him any thing, even if I had to go with it to help him out. But when men pretend to be farmers, and make a business of borrowing tools that every farmer ought to have, it does not hurt

my conscience any to tell them plainly that I can not afford to lend to them. Such men are the ones who are careless of tools, and slow to return them. A young farmer just starting for himself, and unable to buy, would stand a very good chance to get what he wanted of me, gratis, until he could go alone. Still, it makes trouble to lend to one and not to another. I should like to please all; but I must look to my own interests also, and good tools in good order and ready at a moment's notice are necessary to success on the farm.

There, friend Root, am I not about sound on the lending question? At any rate, these are about my views; but if you can show me wherein they are wrong I will try to change.

T. B. TERRY.

Hudson, Ohio, Sept. 24, 1885.

Thank you, friend T., for your explanation, and forgive me if I seemed to criticise a little. If I did, I meant to include myself in the criticism: for after the conversation referred to was over, I had a sort of guilty feeling for the part I had taken in it; that is, we three all had been talking and telling stories in a way that seemed to reflect on our neighbors; and if it is hard to get along with neighbors sometimes, God only knows where we should be if it were not for these same neighbors. I think you are sound, friend T., on the lending question; but let us beware of falling into not only uncharitable talk but uncharitable feelings toward these same God-given neighbors, shall we not?

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT.

EDITOR AND PUBLISHER

MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, OCT. 13, 1885.

Blessed is the man that walketh not in the counsel of the ungodly, nor standeth in the way of sinners, nor sitteth in the seat of the scornful. Psalm 1.

REMEMBER, 5 per cent discount on all goods ordered now for next season's use.

HEDDON'S EXTRACTED HONEY.

The two kegs mentioned in a previous number came to hand in good order. Not a drop of honey had escaped to make things dauby. The quality of the honey is certainly superior. Our stenographer describes it exactly by saying that there is a "finish" to the flavor that we do not often find in ordinary brands.

MIXING ORDERS IN WITH "VISITING" LETTERS.

If you want your orders to be filled by first mail or first train, don't put them in the middle of a long letter. Our long letters are frequently laid aside until we can get time to go through them carefully, while every thing in the shape of an order is pushed ahead to the proper clerk the minute our eyes rest upon it. You need not put the orders in a separate piece of paper unless you choose, but please let them come first. If they are to be made conditional, mark them so, and say, "See particulars below."

CONCORD GRAPEVINES, AND BASSWOOD AND TULIP TREES FOR FALL PLANTING.

Now is the time to put them out, and we have a better stock of better trees and vines than we ever had before. The grapevines were put out on our grounds just about a year ago, and have made a splendid growth during the past season, under the influence of underdraining, subsoiling, and good cultivation. Price 10 cts. each; 85 cts. for 10, or \$6.50 per 100. If sent by mail, 5 cts. each extra for postage and packing. The postage is a little more than former years, as the vines are larger and better rooted. For prices of basswood and tulip trees, see our price list.

FOUNDATION WITH HIGH WALLS FOR SHALLOW WALLS; WHICH IS PREFERABLE?

OUR friends are probably aware, that for several years samples of comb foundation have been sent out having walls so deep that it is really a pretty near approach to honey-comb itself. The queen might lay eggs in this foundation, or the bees might store a little honey in it, without any working-over at all. Of course, the walls are much thicker than the walls of natural comb, or the walls built on foundation having only a shallow wall when given to the bees. Now the point is, do the bees make these walls thinner, and do they take hold of this high-wall foundation quicker than that made with shallow walls? To test the matter we have recently placed pieces of both kinds of foundation side by side, attached to the comb-guide of an empty frame, and placed the same in the center of strong colonies. The result is this: The bees take hold of one kind of foundation just as quick as the other, and they draw it out into comb at the same rate of speed—we can not see a bit of difference. But when the finished comb is held up to the light, there is a very remarkable difference. The deep-cell heavy foundation has the bottom just about as it was made by the foundation-rolls. The deep walls are also about the same, while the other is thinned down in both wall and base of cell, so near to that of natural comb that it is difficult to distinguish the difference. The friends may be perhaps aware, that the foundation we have sent out has always been with rather shallow walls—walls not too deep for the bee to grasp with his mandibles, and fashion over to suit his notion. With our foundation, we give on an average about 7 sq. ft. to the pound, for brood-combs. The deep heavy-wall foundation, such as several manufacturers send out, give us from 4 to 6 feet to the pound. We have seen some specimens so heavy that 3½ sq. ft. would make a pound. Now, then, we can easily figure how much more it costs; and I think if you will make the experiment as we have done, you will find your wax is pretty much all right where the mill put it, after the bees have drawn it out into comb. The deep-wall foundation is handsome to look at, I am well aware; but I can not discover that it has any other merit, and it is terribly expensive, if we have made no mistake in our experiments. Of course, the above refers to brood-combs only. If you use heavy foundation for surplus boxes, you will have the "fish-bone" that has been complained of, without any doubt.

FOR SALE,

A SECOND-HAND TWO-HORSE-POWER EUREKA ENGINE AND BOILER.

The above engine has been in use about five years; but Mr. A. F. Stauffer, of Sterling, Ill., of whom we purchased it, writes in regard to it as follows:

I guarantee the engine to be in good working shape, as good as it ever was. I had boiler examined last spring by a steam-fitter, and he pronounced it as good as new. I always used soft water. I am furnishing my shop with new machinery and am anxious to sell or exchange it. I have to get more machinery, and my two-horse power is too light.

Sterling, Ill.

A. F. STAUFFER.

We will sell the above engine, to be taken at Sterling, Ill., for an even \$100, and we will put our guarantee on top of that of friend S. We obtained it of him in exchange for some new machinery, he, of course, putting in a larger engine and boiler.

Also one second-hand **Pony Planer** for sale. This planer is one that we used in our factory for planing all our basswood plank, heavy lumber, etc., and was set aside only because of the increase of our business. The plane is 24 inches in width, and such a machine would cost new \$140 net cash. It is all in good trim, and ready for work, with an extra pair of new knives, and it will be sold for just half price, or \$70.00.

A. I. ROOT, Medina, Ohio.

* FOR SALE *

I WILL SELL

Full Swarms of Pure Italian Bees

DURING THIS MONTH FOR

Four Dollars Each.

They are in 10-frame Simplicity hives, and in good winter shape. Ready to ship now. Send money by registered letter. Address

M. R. NICHOLS,

1914b Weaver's Corners, Huron Co., O.

**DADANT'S FOUNDATION FACTORY, WHOLE-
SALE AND RETAIL.** See advertisement in another column. 3btf

HONEY AND BEESWAX.

We are now in the market, and will be during the entire season, for all honey offered us, in any quantity, shape, or condition, just so it is pure. We will sell on commission, charging 5 per cent; or if a sample is sent us, we will make the best cash offer the general market will afford. We will handle beeswax the same way, and can furnish bee-men in quantities, crude or refined, at lowest market prices. Our junior member in this department, Mr. Jerome Twiehell, has full charge, which insures prompt and careful attention in all its details.

Sample of comb honey must be a full case, representing a fair average of the lot. On such sample we will make prompt returns, whether we buy or not.

CLEMONS, CLOON & CO.,

Kansas City, Mo.

TRY THE BELLINZONA ITALIANS,



15tdfb

And see for yourself that they are the best. Warranted Queens, bred from mothers imported direct from the mountains of Italy, \$1.00 each; 6 for \$5.00. Special discount on large orders. Satisfaction guaranteed. Send for circular. Orders filled promptly.

CHAS. D. DUVALL,

SPENCERVILLE, MONT. CO., MD.

Wanted. To buy a small farm and apiary. Give terms of sale, honey resources, distance to school and church. California given preference.

E. S. ARWINE,

Patterson, Waller Co., Texas.

For Christmas. 50 SCROLL-SAW DESIGNS for working brackets, easels, etc., 10c. J. L. HYDE, POMFRET LANDING, CONN. 1914b

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Names of responsible parties will be inserted in any of the following departments, at a uniform price of 20 cents each insertion, or \$2.00 per year.

\$1.00 Queens.

Names inserted in this department the first time without charge. After, 20c each insertion, or \$2.00 per year.

Those whose names appear below agree to furnish Italian queens for \$1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen be reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delays as may be unavoidable.

Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with * use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for \$1.00 before July 1st, or after Nov. If wanted sooner, or later, see rates in price list.

*A. I. Root, Medina, Ohio.	
*H. H. Brown, Light Street, Columbia Co., Pa.	19td
*Paul L. Viallon, Bayou Goula, La.	19td
*S. F. Newman, Norwalk, Huron Co., O.	19td
*Wm. Ballantine, Sago, Musk. Co., O.	19td
*D. G. Edmiston, Adrian, Len. Co., Mich.	21td
*S. G. Wood, Birmingham, Jeff. Co., Ala.	19td
*S. C. Perry, Portland, Ionia Co., Mich.	21td
*E. T. Lewis, Toledo, Lucas Co., O.	3-1
S. H. Hutchinson & Son, Claremont, Surry Co., Va.	5-3

*E. Kretschmer, Coburg, Mont. Co., Iowa.	17td
D. McKenzie, Camp Parapet, Jeff. Parish, La.	19td
Peter Brickey, Lawrenceburg, And. Co., Ky.	17-21
Ira D. Alderman, Taylor's Bridge, Stump. Co., N.C.	19td
*J. W. Keenan, Bloomington, McLean Co., Ill.	11-21
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G. F. Smith, Bald Mount, Lack'a Co., Pa.	21td
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JOB LOT OF WIRE CLOTH

AT GREATLY REDUCED PRICES.

SECOND QUALITY WIRE CLOTH AT 1 1/2 CTS. PER SQUARE FT.

SOME OF THE SIZES TO WHICH THIS WIRE CLOTH CAN BE ADAPTED.

This wire cloth is second quality. It will answer needs for covering doors and windows, to keep out flies and covering bee hives and cages for shipping bees, making frames for sifting seeds, etc.

Inches Wide.	No. of Rolls.	Number of Squares of wire in each Roll.	Respectively.
10	3 3/4 rolls of 25, 72 s. f.		
12	2 2/3 rolls, 109 s. f. each.		
20	3 3/4 rolls of 166 s. f. each.		
22	4 2/3 rolls of 181, 1 of 169 s. f.		
24	6 4/5 rolls of 180, 1 of 182, and 1 of 190 s. f.		
26	23 rolls of 217, 28 of 216, 7 of 195, 1 of 193, 1 of 191, 1 of 187, 1 of 183, 1 of 210 s. f.		
28	16 1/3 rolls of 233, and 2 of 231 s. f.		
34	7 5/8 rolls of 281 s. f.		
36			
38	28 rolls of 316, 3 of 285, 2 of 317, 1 each of 190, 622, 197 and 215 s. f.		
42	1 roll of 348 s. f.		
44	2 1/2 rolls of 366, 1 of 348 s. f.		
46	1 roll of 152 s. f.		
48	12 9/10 rolls of 400, 1 of 100, 1 of 30, 1 of 200 s. f.		

FIRST QUALITY WIRE CLOTH AT 1 1/2 CTS. PER SQUARE FT.

The following is first quality, and is worth 1 1/2 cts. per square foot. It can be used for any purpose for which wire cloth is ordinarily used; and even at 1 1/2 cts. per sq. ft. it is far below the prices usually charged at hardware and furnishing stores, as you will ascertain by making inquiry. We were able to secure this very low price by buying a quantity of over one thousand dollars' worth.

Inches Wide.	No. of Rolls.	Number of Squares of wire in each Roll.	Respectively.
10	1 roll of 156 s. f.		
12	22 roll each of 88, 143, 92 s. f.		
24	43 rolls of 200 sq. ft. each; 1 each of 50, 96, 120, 168, 100, 160, 150, 140 sq. ft.		
36	58 rolls of 216 sq. ft. each. 1 each of 195, 193, 300, 390, 361, 227, 201, 284 sq. ft.		
48	76 rolls of 233, 6 of 231, 3 of 219, 8 of 222, 7 of 224, 2 of 210, 1 of 117 sq. ft., 1 each of 39, 210, 257, 240, 215, 10, 92, 87 sq. ft.		
60	36 rolls of 250 sq. ft.; 1 each of 22, 137, 114, 117, 129, 125, 229, 225, 227, 237, 235, 275, 240, 137 sq. ft.		
72	12 of 266, 7 of 256, 2 of 253 square ft.; 1 each of 233, 254, 117 sq. ft.		
84	31 rolls of 283 sq. ft. each; 1 each of 62, 113, 198 sq. ft.		
96	22 rolls of 300 s. f. each; 2 of 71, 1 each of 285, 190, 279, 285 sq. ft.		
108	38 1/2 roll each of 300 and 316 sq. ft.		
120	40 1 roll of 233 square feet.		
144	42 1 roll of 350 square feet.		
168	46 1 roll of 192 square feet.		

A. I. ROOT, Medina, Ohio.

FOR SALE.

50 COLONIES OF BEES in Langstroth and Simplicity hives—hybrids in good shape for winter; \$3.50 per colony on the cars, or \$3.25 as they stand. 29-21d. GEO. W. SIMMONS, Newark, Del.

Hive Manufacturers.

Who agree to make such hives, and at the prices named, as those described on our circular.

A. I. Root, Medina, Ohio.	
P. L. Viallon, Bayou Goula, Iberville Par., La.	19td
C. W. Costellow, Waterboro, York Co., Me.	21-23
Kennedy & Leahy, Higginsville, Lat. Co., Mo.	17td
E. T. Lewis, Toledo, Lucas Co., Ohio.	3-1
H. F. Moeller, cor. 5th st. and Western Ave., Davenport, Ia.	3-1
E. Kretschmer, Coburg, Montgomery Co., Ia.	17td
C. P. Bish, Petrolia, Butler Co., Pa.	15-1

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Apply to CHAS. F. MUTH, CINCINNATI, O.
P. S.—Send 10-cent stamp for "Practical Hints to Bee-keepers." 17td

HONEY COLUMN.

CITY MARKETS.

KANSAS CITY.—*Honey.*—Demand for all kinds of honey good, and prices much improved. Choice 1-lb. sections bring 16¢ to 17¢ on arrival, and demand in excess of receipts. Ship now while the weather will admit and it will come in good shape and bring good prices. Two-pound sections are sold nearly altogether now from California stock, being cheaper than any other, 12¢ to 14¢ being ruling rates for it. Extracted in fair demand at 40¢ to 45¢ dark, and 46¢ to 48¢ for light. *Beeswax.*—A little firmer, at 23¢ for good average stock. **CLEMONS, CLOON & CO.,**
Oct. 27, 1885. Cor. 4th & Walnut St's, K. C., Mo.

NEW YORK.—*Honey.*—The market is very active in comb honey. There is a good demand for all grades. Prices are ruling low. Fancy white 1-lb. sec., 14¢ to 16¢; 2-lb. sec., 12¢ to 13¢. Lower grades, 10¢ to 12¢. Bulk, 9¢ to 10¢. There is hardly any demand whatever for extracted honey. *Beeswax.* 25¢ to 26¢.
Oct. 12. **THURBER, WHYLAND & CO.,**
Reade & Hudson Sts. New York.

BOSTON.—*Honey.*—Honey is selling very well, but prices are very low, and we are often obliged to shade our price in order to make sales. We quote best 1-lb. sections, 14¢ to 16¢; and 2-lb. sections, 12¢ to 14¢. Extracted, 60¢ to 80¢. *Beeswax.* 30¢.
Oct. 22. **BLAKE & RIPLEY,**
57 Chatham St., Boston, Mass.

MILWAUKEE.—*Honey.*—This market continues about the same for honey as during the past month. The receipts are not large, and demand for comb is yet is rather moderate, while extracted is in good demand, and very little time before arrivals are sold. Comb, choice 1-lb. section, 16¢ to 18¢. Extracted, kegs and bbls., 8¢. **A. V. BISHOP,**
Oct. 23, 1885. 142 W. Water St., Milwaukee, Wis.

CHICAGO.—*Honey.*—Market is very firm. White comb brings 15¢ to 16¢, soon after arrival, the demand being equal to the receipts. Producers should forward their comb honey before freezing weather, so that it may get to market in good shape. There is no charge for storage. Extracted honey sells more freely at 50¢ to 55¢, according to quality.
Beeswax. 25¢ per pound for yellow.
Oct. 21, 1885. **R. A. BERNETT,**
161 So. Water St., Chicago, Ill.

ST. LOUIS.—*Honey.*—Extracted honey in bbls., Southern, 40¢ to 45¢. Northern, worth more; 2-eal. cans, retail, 85¢ to 1.00. Northern, 1-gallon cans, retail, 1.00. Comb honey—Our market is bare of choice white-clover—wanted at 17¢ to 18¢. Fancy, 20¢. *Beeswax.* 24¢ to 25¢. Fair demand, numerous inquiries.
W. T. ANDERSON & CO.,
Oct. 22, 1885. 104 N. Third St., St. Louis, Mo.

CLEVELAND.—*Honey.*—There has been a marked improvement in the demand for choice new honey within the past two weeks, and all receipts have been closed out at 14¢ to 15¢. There is a small stock of old on hand, which moves very slowly at 10¢ to 12¢. Extracted, 60¢ to 80¢. *Beeswax.* scarce at 22¢ to 25¢.
Oct. 21, 1885. **A. C. KENDEL,**
115 Ontario St., Cleveland, O.

FOR SALE.—500 lbs. ext'd white-clover and basswood honey in 15-lb. 10-gallon kegs at 75¢ per lb. Kegs thrown in free of charge.
M. ISBELL, Norwich, N. Y.

FOR SALE.—1500 lbs. of white-clover and linn extracted honey, put up in new oak kegs, of 15 lbs. each, delivered on board cars here for 80¢ per lb.
F. W. HOLMES, Coopersville, Mich.

FOR SALE.—10,000 lbs. of clover and basswood honey, fine quality, in barrels of 250 lbs. net, on cars here, for 80¢ per lb., including barrels.
E. FRANCE & SON, Plattville, Wis.

FOR SALE.—10,000 lbs. extracted honey, put up in 75-pound new tin cans, well crated, at 75¢ per pound, linn and white clover mixed. Warranted to be of best quality.
Address J. B. MURRAY, Ada, Ohio.

FOR SALE.—1500 lbs. extracted poplar and sumac honey in any kind of vessel, from 10 oz. tumbler up to 100-lb. tin cans, to the highest bidder.
H. M. MOYER, Hill Church, Berks Co., Pa.

WANTED.—1300 or 2000 lbs. of nice white comb honey in 1-lb. boxes; must be cheap—Ohio honey preferred. Address, stating price,
B. T. BLEASDALE, 556 Woodland Ave., Cleveland, O.

WANTED.—500 lbs. comb honey at Chicago prices, cash. **OLIVER FOSTER,** Mt. Vernon, Linn Co., Ia.

Recent Additions to the Counter Store. FIVE - CENT COUNTER.

Postage. {Pr. of 10, of 100

2 **POCKET SCISSORS**, round points, | 40 | 3 50
Solid-steel handle and blades, and only five cents. The secret of the wonderfully low price on these scissors is, that the inventor and manufacturer failed, and these goods were sold for what they would bring. As they are made of steel wire, they may not be considered handsome, but they are excellent for cutting, for all that.

2 **LAMP-BURNERS**, VENUS | 48 | 4 75
Two sizes, No. 9, and No. 1. I believe this is the first time that a good lamp-burner has been sold for the small sum of five cents, and we consider the Venus burner the best in the market.

FIFTY-CENT COUNTER.

10 **BUNYAN'S PILGRIM'S PROGRESS** | 3 50 | 32 50
A book of 32 pages, nicely bound and illustrated. Two copies, 50 cents; three copies, \$1.20; five copies or more, 35 cents each.

SEVENTY-FIVE CENT COUNTER.

SPADES FOR UNDERDRAINING | 6 00 | 55 00
Two kinds; one for ditching, the other for cleaning the bottom of the drain, and either kind is furnished with short or long handles, as may be preferred. They are of the finest quality of tempered steel, and are of the latest and most approved pattern.
A. I. ROOT, MEDINA, OHIO.

DADANT'S FOUNDATION FACTORY, WHOLE-SALE AND RETAIL. See advertisement in another column. 3b1fd

HONEY AND BEESWAX.

We are now in the market, and will be during the entire season, for all honey offered us, in any quantity, shape, or condition, just so it is pure. We will sell on commission, charging 5 per cent; or if a sample is sent us, we will make the best cash offer the general market will afford. We will handle beeswax the same way, and can furnish bee-men in quantities, crude or refined, at lowest market prices. Our junior member in this department, Mr. Jerome Twichell, has full charge, which insures prompt and careful attention in all its details.

Sample of comb honey must be a full case, representing a fair average of the lot. On such sample we will make prompt returns, whether we buy or not.
CLEMONS, CLOON & CO.,
15 2db **Kansas City, Mo.**

For Sale. Eight pair of Mammoth Bronze Turkeys, five dollars per pair.

Address **N. L. HIGBIE, M. D.,**
21b1db **Elsie, Clinton Co., Mich.**

EXCHANGE DEPARTMENT.

Notices will be inserted under this head at one-half our usual rates. All ads. intended for this department must not exceed 5 lines, and you must say you want your ad. in this department, or we will not be responsible for any error.

WANTED.—In exchange for new varieties of strawberries and raspberries, Plymouth Rocks, Light Brahmas, Pekin Ducks, new varieties of potatoes, and small-fruit plants, cherry and quince trees.
P. SUTTON, Exeter, Luz. Co., Pa. 16-23db

WANTED.—To exchange one-half bushel of extra fine white clover seed for alsike clover seed. 19b1db **M. A. GILL,** Viola, Rich'd Co., Wis.

WANTED.—To exchange German silver E-flat cornet for 72 lbs. of comb honey.
21b1db **L. B. BELL,** Brecksville, Ohio.

WANTED.—To exchange three pairs of first-class Brown Leghorns (worth \$3.00 per pair), for clover honey or supplies.
21d **W. H. OSBORNE,** Chardon, O.



Vol. XIII.

NOV. 1, 1885.

No. 21.

TERMS: \$1.00 PER ANNUM, IN ADVANCE; 2 Copies for \$1.99; 3 for \$2.75; 5 for \$4.00; 10 or more, 75 cts. each. Single Number, 19 cts. Additions to clubs may be made at club rates. Above are all to be sent to ONE POSTOFFICE.

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NOTES FROM THE BANNER APIARY.

NO. 21.

THE NORTH AMERICAN CONVENTION.

I WENT to Detroit last week to meet Mr. Cutting, and complete the arrangements for the coming meeting of the North American Bee-Keepers' Association. We worked hard to find some public building that could be had free of charge, but it was simply impossible. None of the city churches were ever used for such purposes, and it seemed for awhile as though we should be obliged to pay \$90 for the use of a hall. At last, however, we found a hall called the "Red Men's Wigwam," in which an organization called the "Red Men" hold their meetings. This hall will comfortably seat about 250 people, is well lighted, carpeted, furnished, and neat and cosy, and was secured for \$40.00. It is located at 63 Michigan Avenue, one block west of the City Hall, and just across the street from the Antisdel Hotel, which will be the hotel at which the society will make their headquarters. The regular rates are \$2.00 per day, but they have given us rates at \$1.25 per day, provided we will "double up" on rooms, and who ever knew a bee-keeper at a convention who wanted to be put off into a room all alone?

We called upon Mr. G. E. King, Secretary of the Mich. Railway Association, and we will have reduced rates in Michigan, and he said there would be no doubt but that he could secure reduced rates as far east as Buffalo, as far west as Chicago, and as far south as Toledo. I am now in correspondence with the secretaries of other associations, and expect to have reduced rates to still further points.

As soon as the arrangements are all completed I will make the announcements in all the bee-papers, and then all who intend to come can send for certificates.

I am working hard to get up a good programme. It is not yet complete, but I can announce the following: Reversing Combs, James Heddon; Bee Pasturage, Thomas G. Newman; Marketing Honey, C. F. Muth; Production of Extracted Honey, Chas. Dadant and Son; Production of Comb Honey, G. M. Doolittle; The Pollen Theory, Prof. A. J. Cook; Selling and Shipping Bees by the Pound, E. M. Hayhurst; Comb Foundation, John Vandervort; Wintering Bees, Ira Barber; Excellence or Cheapness, which? A. I. Root. There are several others to whom I have written, asking if they would lead in the discussion upon certain subjects, and I have not yet heard from them; hence I am not at liberty to make any more announcements.

Father Langstroth writes that he hopes to be with us, yet he is not certain. E. J. Outman will be present, also Wm. F. Clarke, Allen Pringle, H. R. Boardman, Dr. L. C. Whiting, H. D. Cutting, Dr. A. B. Mason, O. J. Hetherington, and James Ure. I have written to Mr. D. A. Jones, asking him to take the lead in the discussion upon the "Different Races of Bees." I have also written to a large number, asking them if they will be present; but their answers are only beginning to arrive.

The President of the Mich. Agricultural College, Mr. Willits, will be present, and welcome the society to Michigan. It will be remembered that he is the one who helped Prof. Cook to get the ruling that allows us to send our queens by mail. He will give us a "rouser." I have met him, and I know that he is capable of it.

The evening sessions will be devoted to answering questions. There will be a question-box, and all questions that come up during the day will be written out and dropped into the box, and at the evening session they will be taken out and discussed. Any one who will not be present can send questions to me at any time previous to or during the meeting, and I will put them into the box. If any questions are sent to me during the meeting, send them to Detroit, care of Antisdel House. The present indications are that the coming meeting will be one of the most pleasant, interesting, and successful ever held by the society, and I sincerely hope that as many of you as possible may be present to participate in the "good time."

S—W. Z. HUTCHINSON, 70—40.

Rogersville, Mich.

Sec. N. A. B. K. A.

Friend H., I want to encourage you in having done at least one good thing in this matter; that is, in choosing a hall that we have to pay for. If the bee-keepers of North America can't raise \$40.00 for the use of a hall, they are a rather sorry set. I am glad, too, that we are to be entertained at a hotel that does not have any whisky-shop just over t'other side, or back of the desk. The doubling-up won't hurt us in the least.

HOW TO RAISE BUCKWHEAT.

ITS SOIL, PREPARATION, AND HOW TO HARVEST.

I SEE considerable in GLEANINGS in regard to buckwheat for bee pasture. The main object of buckwheat is to secure a good crop of grain; for if you do this you will secure your crop of honey also. Now to do this there are several things to be considered; to wit, the quality of soil, the preparation, time of sowing, etc. Buckwheat will not pay in all localities in this country. Neither river bottoms, nor a loose rocky soil is good for it. On this account it produces such a luxuriant growth of straw that it falls down and does not fill; and the fog along rivers is thought to prevent its filling. As a rule it will not do well on a loose stubble-field, although I have known some good crops raised on wheat-stubble by breaking up and harrowing down level, then sowing and harrowing in.

To insure a good crop, select a good sod on a good clay soil that does not lie too level, so that it will drain well; break early in the season—the earlier the better; let it lie until near the time to sow, then cross the ground, stirring it well, and then let it lie a few days.

Harrow it down level, and sow broadcast, 3 pecks per acre, and harrow again, being careful to have the land perfectly dry when worked; for to work land when wet, for buckwheat, is to destroy the crop. The sod may be broken when moist, but not too wet. After this you may just as well not sow at all as to work the land when wet. The time for sowing here is from the 15th of June to the 10th of July; but if the locality is inclined to be frosty, I would not risk it later than the 1st of July. If your land is prepared as above, and sowed in time, if the land is strong enough to produce a good sod you will get a good crop without using fertilizers; but if it is not, a light top dressing of stable manure spread on and harrowed in with the buckwheat will pro-

duce a good crop. If you put it on too thick it will cause it to fall down. Lime is a good fertilizer, and also a good phosphate.

Now a few words in regard to harvesting: Cut when three-fourths of the grains are ripe; cut, if possible, when damp; let it lie in swaths a few days until the straw is partially cured, then rake in good-sized bunches, and set it up, twisting the tops, and then chuck it down well so that it will not fall down. If it does, it will not dry out; and if it should blow down it should be set up at once. Let it stand until dry, which will take from 8 to 12 days, if the weather is fine. If you have only a few acres, the cheapest way to thrash it is the old way with the flail, providing you or some of your neighbors have a fanning-mill. If it is as dry as it should be, two men will thrash as fast as one can haul, even if you have your floor prepared in the field where it grows. This is done by shoveling off the loose dirt until you come to solid ground, and let it dry off; you can then thrash with but little loss. If, however, you have a large crop you want the separator; and if you have a good barn floor, there is where you want to thrash. The best plan, after raising a crop of buckwheat, is to sow the stubble in oats and grass the following spring, so as to get back to a sod. It may be sown down in rye and grass the same fall, with good results.

WM. D. TITCHENELL.

Pleasant Hill, W. Va., Oct. 21, 1885.

Thanks, friend T. I believe I should agree with you in regard to buckwheat, only on our clay land we never have any success without phosphate, which we sow with a seed-drill, just as they sow it for wheat. In our locality it seems to fill better if sown rather late—just so as to escape frost, for instance. Our boys are just now thrashing an excellent crop that was sown about the first of August. We drill it in just as we drill in wheat.

OUR OWN APIARY.

AN IMPORTATION OF 75 QUEENS.

WE have just received another importation of 75 queens. They were shipped the 28th of Sept., and arrived here the 17th of Oct. There were only three dead and two missing out of the whole lot, and the rest are all safely introduced. Of all the importations of queens we have ever received, I think I never saw any equal to these. They are large and yellow, and at this date (Oct. 23d), are laying nicely. Including the imported queens we already had on hand, we now go into winter quarters with about a hundred, all told. This will give us a fine vigorous stock for next season. Taking every thing into consideration, the imported stock, season after season, seems to give the best results.

BEE-VEILS WITH GLASS FRONTS.

Several have sent us veils with glass fronts. We have given them a careful test; and while they are superior for a short time to any thing else for looking at eggs, we find them objectionable on account of the steam from the breath forming on the glass so soon. If the weather is at all cold, the glass becomes coated like the windows of a room on a frosty morning. Even in a warm day some moisture will collect upon the glass. Again, it is liable to be bro-

ken at any time, nor can it be carried in the pocket. A veil made of grenadine, with a Brussels net for the face, offers scarcely any obstruction to the eyesight. I don't remember that I ever had any trouble in seeing eggs with a veil of this kind. Unless the bees are very cross, or one has some particular work on hand, I think the ability to control the nerves and muscles of the face is far superior to any veil that was ever invented. One must have such control of himself, that when a bee alights upon his eye or nose, with evident hostile intent, he will pay no heed to it. In the great majority of cases, the bee will conclude that it is a waste of sting to give vent to his ire, when seemingly it would do no good. It took me a long time to learn this, and sometimes I got out of practice now. Father used to poke fun at me, and tell me that I would abandon the continual use of the veil. I mentally vowed I wouldn't; but it is strange how people *will* change their minds; isn't it, and that they should sometimes think that the sole embodiment of wisdom and experience is theirs?

THAT NAMELESS DISEASE, AGAIN?

A correspondent, in another column, claims that the removal of the queen does not effect a cure. Perhaps there are different phases of this disease, as of foul brood. The colony in our apiary that I spoke of some time ago seems to be on the road to recovery. The bees from the new queen we introduced seemed strong and healthy, and show none of the symptoms of the old bees. I am inclined to think that the disease that affected the swarm in our apiary is hereditary, though it may differ in other localities.

PAINTING HIVES.

We are now giving all our tin-roof chaff-hive covers a new coat of paint, as they begin to need it now. It has been some three or four years since they were last painted.

ERNEST R. ROOT.

PREPARING FOR WINTER.

FRIEND DOOLITTLE TELLS US EXACTLY HOW HE DOES IT.

AS I am now busy, and have been for the past month or more, preparing my bees for winter, I thought perhaps some of the readers of GLEANINGS might like to know how I fixed them. The first thing I did was to see that all had honey enough, which should be at least 25 lbs., to last from the first of October till the flowers secrete honey next year; but as I found that I did not have enough to give all quite that amount, I have allowed only 20 lbs. to those which are to be wintered in the cellar, expecting to feed, if necessary, in the spring. To ascertain the amount in each hive I first took some average empty combs the same age as were in the hives, containing about the same amount of bee-bread, and weighed them, by which I found that the average weight of a comb was three-fourths of a pound. I then took a spring balance and went to a hive, opened it, and hooked each comb of honey on the spring scale, setting down the weight thereof. The whole was then added up, and the weight of the comb subtracted, which gave me the amount of honey in the hive. If there was not 25 lbs., I took out the combs having the least honey in them, and put in full combs of honey, which I had reserved for feeding purposes, until the proper amount was obtained. If they had

too much, some full combs were taken away from them, to be used in feeding others; and in this way all were made to weigh 20 or 25 lbs. of honey. After thus weighing the combs in a few hives, I got so I could dispense with the scales, and just count the number of pounds of honey right off by simply lifting the combs. Weighing them afterward showed that I was not one-half pound out of the way. After one gets used to this plan I consider it much better than the weighing of hives, for there is a certainty about it, secured in no other way.

After all had sufficient honey, those which are to be left on the summer stand during winter were carefully packed with chaff at the sides, in place of the side boxes which were used during the summer. As the chaff packing in the front and rear remains undisturbed year after year, this gives packing all around, except on top. For the top, I prefer (after having used all kinds of material for packing), fine basswood sawdust, such as comes from the saws in sawing sections. This is filled into common cotton cloth, so shaped as to form a cushion four inches thick, or deep, and large enough to come over the top of the brood-chamber, and half way over the chaff packing on all the sides. The reason for preferring this fine basswood sawdust is, that it seems to pass off moisture, and retain the heat of the bees during all times that any packing will pass off moisture; and at times when this moisture does not so pass off it will absorb it, even to almost the bulk of the cushion, thus keeping the bees always dry, bright, and warm. Those colonies which are to be wintered in the cellar are all in single-walled hives, having an eight-inch-high cap. This cap is turned bottom side up, and filled with fine straw, when a follower is placed on the straw, upon which I stand a moment or two, thus pressing the straw into the cap. As I am a "do-little fellow," weighing only 250 lbs., this process fixes the straw so you can handle the cap as you please, and the straw will not fall out afterward. The cap is now placed on the hive, which has, over the frames, a quilt of two thicknesses of cotton cloth, which allows the moisture to pass up through the straw and out at the cracks at the top of the cap during the fall months, before setting in the cellar. When set in the cellar, the cap is raised one-half inch above the top of the hive, resting on little blocks at each corner. As the straw always settles a little below the bottom of the cap in the middle, when thus raised it strikes the top of the hive except all around the outer edge, thus keeping the cluster of bees warm, dry, and nice, while the moisture escapes all around the outside of the hive.

The first hive is set eight inches above the cellar bottom, and the next set on top of the cap to the first one, and so on until the top of the cellar is reached. Don't understand that I have set the bees in the cellar yet; for from the 15th to the 25th of Nov. is the time I usually do this; but I have them all fixed but setting in.

G. M. DOOLITTLE.
Borodino, N. Y., Oct. 16, 1885.

Friend D., I agree with you exactly in all you say in the above; but with our chaff hives we prefer about a peck of loose chaff spread directly over the sheet of burlap, before putting down the chaff cushions. This peck of loose chaff is spread all around so as to fill all the corners, and absolutely prevent any bee from getting into the upper story or around the ventilators.

SHIPPING BEES FROM FLORIDA TO THE NORTH.

CAN IT BE MANAGED SO AS TO PROFIT ALL PARTIES, INCLUDING THE EXPRESS COMPANIES?

I WISH to continue the subject-matter of Mr. J. H. Martin's letter, and your remarks, on p. 661, GLEANINGS for Oct. 1. I am glad you feel you ought to help the Florida bee-keepers, and I am sure we are willing to help the Northern bee-men. But, can we help each other in a business way? Can shipping bees by the pound from Florida to the North be carried on so as to leave a profit at both ends of the line? If we could only get in our crop of honey, and then send you our bees in time to gather yours, how nice it would be! but I fear we can not do this completely. How late in the season could the Northern bee-keepers receive bees in order to gather both basswood and white-clover honey? In sections of Florida where the cabbage-palmetto and mangrove grow, the bee-keeper would not want to dispose of his bees in May, because these plants bloom in midsummer; but in all sections like this where I am, there is only the orange and saw-palmetto. The former, last spring, was unusually late, I was told, and I presume the saw-palmetto is generally in bloom the latter part of April. Now, it seems the Northern bee-men could afford to pay a good price for bees, if they could get them in time for white clover and basswood; and it seems the Southern man would profit by disposing of his surplus bees at a moderate price, after the saw-palmetto bloom fades away; so the difference between a "good price" and a "moderate price" would go to help the express companies, that you, Mr. Editor, seem to have so much sympathy for. How many bee-keepers in the North are anxious to undertake Mr. Martin's plan next year? I am anxious to study into the matter, and talk it over with some of the Florida brethren, and we can let you know what we are ready to do. Of course, to make a success of it we must profit by Mr. M.'s experience. I presume transportation facilities were incomplete in his case. This place, Orlando, is connected with the North by an all rail route, and trains leaving it arrive in New York in 50 hours, and in Cincinnati in about the same time.

Now in conclusion, Mr. Editor, let me ask you to make some remarks on the subject—show us your "German thought and Yankee ingenuity" by placing before us some of the things which lie behind the scenes.

My bees have been working nicely for a week or so on goldenrod and other fall flowers. The weather is delightful. Oranges are not ripe yet; but lemons are picked before they are yellow, and were being shipped all last month and this.

Orlando, Fla., Oct. 15, 1885.

L. W. GRAY.

Friend Gray, it does not seem to me as though there is very much left for me to do in regard to the matter. You in Florida will have to decide how low you can furnish bees by the pound, and get your express agent to have his company decide how low they can afford to carry packages of bees by the hundred pounds—say to New York and Cincinnati, as you have it; then we in the North will have to decide what we can afford to pay; and if we get up a trade, all that remains is to work out some plan that will enable the bees to stand a fifty-hour trip safely. It just now strikes me that it

would be much more agreeable to the bees, and better for all parties, if they could be sent to some Northern point by water instead of rail. I think they would stand 100 hours by water better than 50 hours by rail; and very likely they would be worth more when they got to their destination. Can you or somebody else tell us how many hours it takes a steamboat to make the trip, and could it not be managed so that the expense of shipment would be less? We could not afford to pay a good price for bees unless they could get here before the white-clover bloom, although a little further north they might gather quite a crop of honey, even if they did not arrive until the first of July. I am inclined to think that nuclei might be better than packages of bees by the pound, because you could then put in good full combs of brood; and shipping bees in the shape of brood is a very compact and safe way, where you can manage to avoid having the combs broken down. With wired combs, and transit by steamship, there ought not to be a bit of trouble; and to make the thing work nicely, some man located at a point where the steamships stop should buy the bees in large quantities, keeping, say, 1000 colonies to fill orders. He could then purchase large consignments, and he could ship by express to the interior of the States, and sell at a moderate figure. The same thing could be done along the line of our large rivers. We are doing considerable in this line, but we purchase our bees from parties who raise them within five or ten miles of us; for we are not located so that we could afford to purchase profitably from the South.

A NEW NAME FOR HONEY-DEW.

A NAME THAT IS TRUTHFUL, AND AT THE SAME TIME NOT UNPLEASANTLY SUGGESTIVE.

FRIEND ROOT:—I have just read the interesting article by Prof. Cook, on "Plant-louse Nectar," on page 703, GLEANINGS for Oct. 15. I see a distinctive appellation is wanted that will characterize this product, without conveying any unpleasant or unfavorable impression, and yet be literally true. I would suggest that we call it

PLANT-NECTARINE.*

for the following reasons: Because it is descriptive; it implies the origin and the quality of this curious product.

Strictly speaking, its origin is in the plant, although it undergoes its transformation in the body of the plant-louse; therefore it may be truly described as plant-nectarine. The word "louse" is useless.

The origin of honey is in the flower; but it undergoes its transformation in the body of the bee. But we do not use the word "bee" in connection with honey, and therefore we may dispense with the word "louse" in this case also; and in getting rid of it we lose all the unpleasantness that it suggests, and of which you complain. The same may be said of the Latin word *apis*, though it is, perhaps, less objectionable.

We will not speak of "bug-juice." You rightly say that both "honey" and "nectar" are misnomers, when used to describe this secretion; neither is

* Pronounced Nek-ta-rin, not rine.

"honey-dew" correct. "Plant-nectarine" is both accurate and descriptive, the real meaning of the word *nectarine* being "sweet as nectar." Here is a name that commends itself as being accurate, euphonious, and descriptive; and it is not Latin, but musically pure English. FREDERICK D. WEBLEY.

Lane Park, Florida.

So far as I am concerned, friend W., I should like the word "plant nectarine" well enough; but I should be very glad to have Prof. Cook's opinion in regard to the matter. We have had so much trouble and confusion with names picked up at random in times past, that I should greatly prefer that we consider well before deciding upon any name.

ANOTHER PLAN FOR MAKING A QUEEN-CAGE.

SOMETHING EASILY MADE, AND THAT OFFERS QUITE A GOOD MANY DECIDED ADVANTAGES.

IT causes so much trouble and expense to make changes in regard to any implement so generally used as a queen-cage. I have more than once decided that I would advise no more changes, unless the new article possessed very great merit. Another thing, although the cage figured and described below has never before been presented exactly as the inventor shows it here, yet quite a number of the brethren have been figuring on different devices quite similar. It is probable that this invention, like so many others, belongs to so many that it is a hard matter to say just whose property it is, if, in fact, it can belong to any one individual.



COSTELLO'S QUEEN-CAGE.

The only woodwork in this cage is the irregular-shaped block shown at the right. This block is made of 1½-inch plank, bass-wood preferable. Strips are sawed off from the plank, 2½ inches long; then with a buzz-saw with a suitably beveled platform, a three-cornered piece is taken from the whole length, from two corners, in such a way that when you slice off the pieces, they will be like the block above. The dimensions are—thickness, ½ inch. The length of the longest side, as before mentioned, is 2½ inches; length of the longest sloping side, 1½ inches; length of the short sloping side, ¾ inch; length of the remaining side, 1½ inches. This last-mentioned side is at exactly right angles to the longest side first mentioned.

Two blocks, like the one described above, and a piece of common wire cloth, 3 x 4½ inches, make the cage. The wire cloth is folded in the middle, and fastened to the blocks by tinned tacks, as shown in the cut. This leaves a space between the two blocks, to hold the candy, ½ inch wide at the narrowest end, and nearly ¾ at the widest end. A piece of stout manilla paper is placed under the wire cloth, on each side, where the candy comes. The tacks that hold all together hold this paper in place.

When the cage is finished, the bees and queen are put in at the opening where the candy is to be put. After the bees and queen are in, soft candy is pushed into this conical opening until it is filled. For a cover to the candy, get out a piece of tin, 1½ x ½ inch. Prick a hole exactly in the center. Put a single wire nail through this hole; drive it into the wood at one side of the opening. When the tin is turned over the candy, the opening is closed. When the cage is to be put into the hive, swing the tin until it stands at right angles to the cage, and it will keep the cage from dropping between two combs, at the same time leaving the candy orifice open. The bees liberate the queen by digging through the candy. If they should not get through in 48 hours, cut out the candy with a penknife.

When the cage is to be sent by mail it is slipped into the wooden case shown at the left of the picture. Two wire nails driven in the proper place make the package so secure that there is no need of tying it up with paper unless you choose. Printed directions for introducing can be put on one side of this wooden case, and the address and postage-stamp on the other side.

When two cages are to be sent to the same address, the wooden case is to be made double length; for three, triple length, and so on. Where queens are shipped almost daily, these different-length cases can be kept in stock. This makes a much stronger package than tying them together with strings, or tacking them together with tacks, as we have had ample experience; and it is also a good deal quicker done when you are in a hurry to catch the mails.

I see only one drawback to this cage, and that is, that we can not cage a feeble queen directly over a piece of comb containing brood and unsealed honey, as you do the Peet cage. I have not decided whether we shall use it or not; but I give it to you to think about and experiment with, if you wish. Here is what friend Costello says about it:

I send you to day a shipping and introducing cage. If there is any thing novel about it, I should like to have your comments. I do not claim this cage to be wholly original. Put the queen and bees into the cage through the candy hole; fill with candy after the bees are all in.

C. W. COSTELLO.

Waterboro, Me., Sept. 7, 1885.

NOTES ON GLEANINGS FOR OCT. 15.

AND SOME KIND WORDS AS WELL.

GLEANINGS for Oct. 15th is at hand, and is worth to me more than the price of the entire year's subscription. Your articles are generally read by me to the whole family (there's a lot of us too), and excite much favorable comment and discussion. Says one, "That article (Our Homes) is worth five such sermons as we heard from the pulpit to-day," and I heartily agreed with the speaker. Continue to give us just such plain, rambling, practical talks, and you will never lack for readers. GLEANINGS can not be injured by inserting articles from such a live man as T. B. Ferry, either, even if he is not a bee-keeper.

A DISEASE OF THE BROOD THAT IS NOT FOUL BROOD.

I have had two cases of diseased brood, as described by Milton Hewitt, on page 609. One colony died last winter, and the other seems to have been cured by a change of queen. There was no smell whatever. The brood seemed to shrivel up, dry, and be removed by the bees. A frame of brood, with sealed queen-cell, and adhering bees, taken from the diseased colony, and given to a queenless colony, did not carry the disease with it. Both colonies were blacks. On page 504 of *A. B. J.* for 1883, Mr. H. L. Jeffrey describes a very similar disease, under the name of "Desiccated Foul Brood." He states the disease to be contagious, and much to be dreaded. Perhaps he can give us further light on this question.

The editorial in regard to deep and heavy foundation, vs. shallow and light, leads in the right direction. Hereafter I shall use no foundation in the brood-chamber heavier than eight square feet to the pound. My experiments with foundation during the past two seasons lead me to agree with Messrs. Doolittle and Hutchinson, that "it doesn't always pay," when producing comb honey. Still, I am loth to accept any less perfect work than we get by using the full wired sheets of foundation.

Mr. Doolittle, I see, has "looked horns" with Mr. Heddon on the question of preventing after-swarms. I must have gotten the "hang" of the Heddon method, for it works successfully with me, and I can certainly no more tolerate the improvements (?) suggested by Mr. Doolittle than I can the use of the cumbersome chaff hives. Is not Mr. Doolittle's cause of failure given in his last paragraph on page 706, where he says, "When I could be on hand, etc.?"

It is indeed true, that Mr. Heddon has a system "all his own," and withal so perfect a one that no progressive bee-keeper who becomes familiar with its details will practice any other.

How to secure the nectar secreted within reach of his apiary with the least possible expenditure of labor and capital, is the problem that Mr. H. is trying to solve; and all his fixtures, methods, and writings tend to its solution. They should be criticised from the standpoint of the specialist only.

The veteran bee-keeper of 15 or 20 years' experience is very apt to become prejudiced and wedded to his own peculiar fixtures and management, and so often views with disfavor the innovations and improvements of this progressive age that we often prefer the judgment of the enterprising apiarist of four or five years' standing to that of the life-time bee-keeper.

DWIGHT FURNESS.

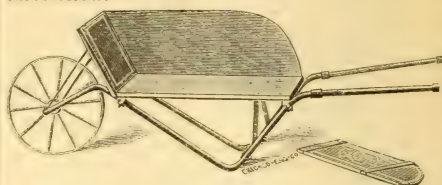
Furnessville, Ind., Oct. 18, 1885.

SOMETHING FOR THE JUVENILE BEE-KEEPERS.

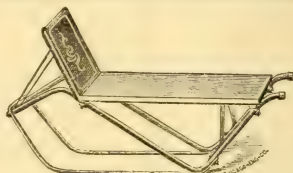
A SLEIGH AND WHEELBARROW ALL IN ONE.

OUR enterprising friends who manufacture the "Bee-keeper's wheelbarrow," of which we have sold so many, have finally remembered the small people usually found around bee-keepers' homes, and they make us a gas-pipe wheelbarrow, all iron except the box, on the same plan of their large wheelbarrows. Not only

is it a first-class good stout wheelbarrow, but when the snow comes (and you know it is coming soon) the handles can be unscrewed, the wheel taken off, a pair of runners put on, and—hurrah boys! *ain't* that a daisy sleigh? You will see how it is by the pictures below.



WHEELBARROW FOR THE JUVENILE BEE-MEN.



THE SAME, CONVERTED INTO A SLEIGH.

You will notice that the runners are all of iron, and the sleigh stands up so high that it will go through deep snow, if need be; and when you are riding down hill you sit up like a man, instead of being down nearly level with the ground. We use a wheelbarrow here at home a good deal to go to the postoffice; and when there comes a big snow the wheelbarrow has to be stowed away somewhere, and the sleigh be got down. Now, with this arrangement we can have them all in one. If there is sleighing, you are all right; and if there comes a muddy time in winter, you are all right. I don't know how long it takes to make the change, but I presume not very long.

May be you would like to know what this nice little implement costs. Well, the price for the wheelbarrow alone, without any sleigh attachment, will be \$1.50; with runners added, 25 cts. more. For an order of 2 at once, 10 per cent off; 3 or more at one time, 15 per cent off. Tens or hundreds rates given on application. The handles are of gas-pipe, $\frac{1}{4}$ inch inside. The weight of the whole complete, is only 9 lbs.

In regard to the use of such a tool, it seems to me that it ought to be a paying investment in any family where there are small boys; for a boy only 2½ years old can do considerable marketing, and carry a pretty fair load with a little cart or wheelbarrow. You see, we know about this at our house, for Huber does quite a good many errands with his cart and wheelbarrow. Only day before yesterday he was sent for coal oil, and brought it back all right, and probably did it just as well as a man or woman could have done it. He will carry quite a load of apples, turnips, sugar, or whatever else may be wanted; and while it is the tallest kind of fun for him, it saves his mamma a good many weary steps,

SHIRKING RESPONSIBILITIES.

WHY FRIEND DANIELS DOESN'T LEND HIS HARROW ANY MORE.

FRIEND ROOT:—You have told so good a harrow story that comes so near my own experience in that line, I am tempted to relate it, as it will give you one more glimpse of certain phases of human nature that you rather seem to think indicate "whole-souled fellows." Well, here it is:

One morning I was accosted thus by Mr. S., a renter: "Mr. Daniels, Mr. R. sent me down to see if you could lend me your harrow to put some wheat in that I am sowing on his place."

"Yes, Mr. S., you can have it. But I shall want it in a few days to put mine in."

"All right; we shall not be using it long."

I waited two weeks before I really had to have it, and it had not been sent home. Then I was in a hurry, and started to hunt it up. I saw it over in the middle of the field, where they had finished and left it. I went to see Mr. S., to have him bring it home. He said Mr. R. was to furnish him tools; and if Mr. R. had not taken it home yet it might stay there. I went to see Mr. R., and told him what Mr. S. said. Mr. R. remarked that he didn't borrow the harrow; and if Mr. S. did not take it home, he wouldn't.

I said, "Mr. S. was your tenant, and got the harrow through your influence, and you ought, as a gentleman, to bring it home."

He said he told Mr. S. that he could get a harrow of me, but that was all. I told Mr. R. that if a tenant of mine should use my word, and get a tool of him, I would take it home. He said he was not that kind. So I took a sled and went after my harrow.

Such, Mr. Root, is one of my experiences in lending harrows, and it has done me worlds of good, for I then and there swore off from lending a harrow (that much-abused tool), and I think I have ample excuse, and have been amply paid for my trouble in going after my harrow, and all my neighbors understand it. This is not written for publication. It is written to you, Mr. Root, and I have given vent to my feelings to at least one man. But I believe that such examples should be held up to the scorn of the world, and not be considered "whole-souled fellows." If they should happen to have a handle to their name, as "Dr.," or "M. D.," it is no better. I want men who have a sense of justice established in their hearts.

S. DANIELS.

Pine Grove, O.

I have given place to the above, because it illustrates so well the point I wish to bring out. There are many quite good people in this world who are in the habit of doing something quite like the neighbors mentioned above, in claiming that they have wronged no one. Now, the truth is, that responsibilities rest on us a great many times when we have individually been in no way at fault. A few days ago a paragraph in the newspapers mentioned the case of a young woman who jumped into a canal to rescue a drowning boy. Some men stood around, but made no attempt to do anything to save him. They might have said, "The boy got into the canal himself; we had nothing to do with it whatever." They might have gone further, and claimed it was none of their business. But it is our business—every one

of us, to help anybody who is suffering, and it seems awful to think there are people who will borrow tools, and refuse to bring them home, under just such circumstances as the one mentioned above. One claims that the responsibility rests upon "t'other man," and "t'other man" claims just the reverse. Friend Daniels, suppose you put the matter this way: "Suppose, neighbor, I had refused to lend my harrow, who would have been the sufferer?" The moral seems to be, that it is a very bad practice indeed to get in a way of borrowing, or lending either.

Not an hour ago I sent for a mortar-box which has been lent for several months. I wanted a mason to go to work at the walls of a greenhouse, before our pleasant fall weather was ended. In fact, a storm is pending just now. When one of my men got there with my horse and wagon the box was in use, and they could not spare it without very great trouble and expense, so he came back without it. If I should stop right here you might reasonably accuse me of the same uncharitableness I have been talking about so much lately; but I am very glad to be able to add, that the neighbor who was using it sent word to me that I should go to work and make a new one at *his expense*. Now, that is what I call Christianlike. I felt happy about it as soon as the message was delivered; but instead of putting our neighbor to this expense I concluded to take the risk of putting my work off one day more; and even if it does rain, I am not going to feel cross about it.

HOW TO SELL COMB HONEY AT FAIRS.

ALSO SOMETHING ABOUT THE WIDTH OF SECTIONS THAT WILL BE WANTED FOR NEXT SEASON.

WE take the following from the *Canadian Bee-Journal* of Sept. 30:

At the Toronto Exposition it was very easy for a person passing through the honey-house to perceive the simple and easy method of disposing of sections which had been but partially filled out. Thousands of sections may be sold at every fair by the method there adopted. We think the credit is due Mr. J. R. Hall, of Woodstock, as the first who commenced selling in this way. It is done by cutting the sections from corner to corner, making four triangular pieces, laying them down on the wood, showing off the honey to the best possible advantage. The pieces sell very rapidly at five cents each, giving you twenty cents for each section. It would not pay to take sections that contained a full pound or more of honey, and cut them in this way. Every year bee-keepers are getting more and more into the habit of using thinner sections; and we are becoming convinced that sections more than $1\frac{1}{2}$ or $1\frac{3}{4}$ inches are too thick to be profitable. We do not think many of our customers will use sections thicker than $1\frac{1}{2}$ inches, perhaps not that thick. Cutting up the sections, and selling the pieces at five cents each at the exhibition, has become so popular that there must have been twenty-five or fifty thousand people fed with honey during the two weeks' fair.

We intended to try the above at our own county fair; but unfortunately our apiary of about 400 hives is less than a fourth of a mile from the fair-ground, and there were so many bees around our honey-stand during the whole three days of the fair that we dared not undertake to cut up comb honey. —I agree with friend Jones exactly in regard

to the width of our section boxes; and my opinion is, that very few will be called for wider than $1\frac{1}{2}$ inches, after bee-keepers get used to this thickness. Of course, they do not hold a pound; but as comb honey is always sold by the weight with us, I do not think it will be an objection. On the contrary, I think more honey can be sold in a package costing at retail from 15 to 18 cents, than by using a section that holds more. At least, that is the case in our vicinity.

REPORT OF THE CONVENTION IN THE CANADIAN NORTHWEST.

A REPORT FROM MANITOBA.

THINKING perchance it might be of some interest to you to hear what is being done in apiculture in this far-off Canadian Northwest, I beg to report that, during the time of the Manitoba Provincial Exhibition last week, a convention of bee-men took place, and an organization under the title of the "Manitoba Bee-keepers' Association" was formed, with Chief-Justice Wallbridge, President; Thos. Collins, Vice-President, and J. Hammond, Hon. Sec. An exchange of experiences among the brethren elicited the following facts:

1. That cellar wintering with chaff packing had resulted most successfully in this part of the world during the past exceptionally severe winter.

2. That there is with us, owing to the numerous and varied sources of supply, an uninterrupted flow of honey and pollen from the very first opening of spring bloom till the occurrence of frost; and that, except when hindered from working by bad weather or high winds, which are very prevalent here, or from defective management, the bees continue brood-rearing without a break throughout the entire season.

My queens are still laying at date of writing, without the stimulus of feed. In this connection, Mr. Vaughan, of Selkirk, Manitoba, stated he had started in the spring with one nucleus, and from this had resulted no less than seven swarms, five of them in strong condition. Our brother being anxious to secure at least some surplus honey, was not quite satisfied with this state of things; but, by the way, friend Root, what a glorious time he might have had if he were only running a "bees by the pound" business!

3. That our work this year would furnish but a very imperfect clew as to the favorableness or otherwise of the past season for honey, as all the brethren had been running mainly for increase of colonies with surplus honey put down as a secondary consideration. It is my opinion, however, that the frequent recurrence of high winds and wet and cloudy weather that characterized the greater part of the summer, warrants me in placing the honey harvest at away below the average.

At our exhibition the entries in the bee-line were as follows: Three of Italian bees, two of comb honey, one of strained, and one of implements—not a large exhibit, you may say; but recollect, it is only a beginning, and, judging from the zeal and enthusiasm evinced by the brethren at the convention, there will be a very different turnout next year.

Friend Root, to appreciate our work it must be borne in mind that we are all novices, struggling

against severe and untried climatic conditions, so that our efforts in a measure must necessarily partake of the nature of experiments. We have much to learn, and perhaps quite a little to unlearn, in order to adapt our methods to the requirements of the country. Nevertheless I am convinced we have good material in our new bee-keepers' association, such as will by no means be content to accept whatever difficulties there may be in the way as impediments to successful bee-keeping in Manitoba.

J. HAMMOND.

Winnipeg, Can.

Friend H., wherever it will pay to raise bees by the pound, it will certainly pay to raise honey; for bees never breed in the way you mention, unless there is honey to be obtained; and when you build up to strong colonies, instead of encouraging increase so much, you will find that you will have good crops of honey.

DO BEES STEAL EGGS?

AN ITALIAN THIEF STEALS AN EGG OF A BLACK QUEEN.

SEEING friend Knox's article, headed "Where did the egg come from?" has induced me to give my experience with a nucleus colony of Italians. I made the nucleus the 1st of May, composed of four frames. They raised me a fine queen from an egg. I introduced this queen to a colony of blacks when one day old. I gave the nucleus a cell just sealed. This one hatched in due time. I took this queen away and gave them the second cell. They hatched this cell in five or six days, and killed the young queen next day after hatching. I let them go five days—no young brood, no eggs, no cells started, so I gave them the third cell. They killed this queen after hatching. I then thought I would let them have their own way, and go without a queen, which they did for three weeks. Then I thought I would give them some eggs from a choice queen from Dr. J. P. H. Brown. On opening the hive to give the eggs, behold my surprise to find a queen-cell about half built, with a very young larva in it, two or three days old. I knew at once they had gotten it somewhere else, so I did not give the eggs, and in 13 days they hatched this queen, and I tell you she was as black as a crow. This is a case beyond a doubt, where an Italian thief stole a black egg.

This queen I kept until her brood was hatched, and they were common blacks.

HOW A YOUNG QUEEN KILLED HER WOULD-BE RIVAL IN THE CELL.

I also held a frame containing a queen-cell about ready to hatch, and saw a young queen just five hours old cut a hole in the side of it, and deliberately sting the young queen within the cell. She repeated the sting three times, and then went on, I suppose looking for another. The bees went to work at once to tear down and drag out the dead queen, and in about half an hour they had the job completed. Now, friend Root, if these facts are worth publishing, you are welcome to them.

R. B. WILLIAMS.

Winchester, Tenn., Sept. 26, 1885.

Friend W., you have given us something very important indeed. We had long ago surmised that bees do, under certain circum-

stances, steal eggs; and your singular experiment seems, so far as I can see, to be evidence almost positive. The next question is, How did that Italian bee succeed in getting access to a brood-comb? If the bee slipped into a black colony in the way that robbers do, and obtained an egg, and got out again, it is one of the most wonderful promptings of instinct that have ever been recorded. This worker-bee was a hero. The safety of the whole colony depended upon him, and he, like a brave patriot, risked his life for the possible chance of obtaining relief for the rest of his fellows, and succeeded. We have had record before, of the way in which a young queen cuts open the queen-cells and stings the occupant, but your account of it is very plain and clear evidence. Many thanks for your communication.

FALSE STATEMENTS IN REGARD TO THE HONEY BUSINESS OF OUR COUNTRY.

As a protection to our bee-keeping population, we propose in this department to publish the names of newspapers that persist in publishing false statements in regard to the purity of honey which we as bee-keepers put on the market.

THE following is sent us, clipped from the N. Y. Weekly Tribune of Oct. 7:

COUNTERFEIT "COMB HONEY."

Mr. George A. Stockwell draws attention to what we have reason to believe is a widely prevalent and growing evil—the adulteration of honey, not only by mixing a large percentage of glucose with the extracted product, but by means of "fed apiaries," where sugar and water is supplied to the bees, which deposit it in the comb. He tells *The N. E. Farmer* that "the market is galled" with this counterfeit, and gives the following items of observation and experience:

"The bee-keeper delights to watch the bees as they come and go. In the busy season they drop upon the alighting-board as fast as drops of rain, and faster than man can count they are leaving the entrance for the fields. The ceaseless activity is inspiring as well as interesting. But in a fed apiary the scenes are different. The young bees and the drones may play in the sun in front of the hive, but the hurrying workers are not seen as in other apiaries. Where are they? They are within the hive carrying syrup from the feeder to the combs. They are active, but active in what? In counterfeiting! The blame lies with the bee-master, who employs bees to build comb around sugar syrup that he may sell for honey. There is profit in selling for twenty-five cents what cost five cents or less, but, in the long run, there is no profit in dishonesty.

The honey obtained by feeding granulated-sugar syrup has an attractive appearance in the comb. It is white, so called, but there is also a dull, bluish tinge that tells its history at once to the practiced eye. If this counterfeit were sold on its merits, no one would complain; but it is sold for honey. A bee-keeper carried to market pure comb honey. Some of it was white, not the bluish white, some was dark, and some yellow. The dealer would not buy. "I could never sell it," he said; "but if you can produce honey like this" (pointing to a can of sugar honey), "I can dispose of it." The bee-keeper was disgusted. His pure honey could not compete and win with sugar and water. Let buyers demand honey, and not accept at any price what is not honey. That will give sugar and water a cold shoulder, and drive it out of the market.

Now, if we knew where Mr. George A. Stockwell lives we might have some chance of refuting this slander on our industry. If there is an apiary in our land where comb honey is produced by feeding bees sugar syrup, let us hold the man up until he quits the business. I do not believe there is a word of truth in the statement, that adul-

terated honey ever brought a better price than a good quality of the genuine article. Will the *Tribune* please take notice, that they are greatly wronging an honest and hard-working class of people by giving place to statements like the above, which are entirely untruthful?

ANOTHER.

I mail you a copy of the *Lafayette Daily Journal*, which has an article on first page, headed "The Busy Bees' Occupation Gone." Please read it. Oxford, Ind. JAS. CAMPBELL.

Below is the extract from the *Daily Journal*, of Oct. 16:

THE BUSY BEES' OCCUPATION GONE.

The spurious honey is now put up in little square boxes, which sell for from twenty to thirty cents a pound! It looks like honey, and it is said that it takes an excellent judge to tell that it is a fraud on the bee.

The comb is manufactured with such skill that but few can tell it from the genuine article. It is made from paraffine or beeswax, and the honey is blown into it by machinery.

Another kind is put up in glass vessels like ordinary jelly-packages, the center of which contains a piece of honey-comb, and the honey is made by pouring about six parts of glucose around one part of honey in the comb. Some of it is adulterated with glucose, some with cane sugar, with the syrup of inverted cane sugar and others by heating ordinary sugar with an acid; but it all resembles honey, and to a certain extent has its flavor and odor.

As there is no name or signature to the above item, we are forced to believe that it is an editorial, or written by one of the reporters. Will our friends of the *Journal* take notice, that the above is absolutely false, and that we have for more than a year been trying to find out a single case of the kind mentioned. The comb honey in little square boxes is genuine bees' honey; and not even an attempt has ever been made to imitate it. We stand ready to go to any needful expense to ferret out this whole matter, and prove what we say. There is this much truth in regard to the last part of the paragraph. There are glass vessels on the market, containing a piece of genuine comb honey; but as all honey candies as soon as the weather becomes moderately cool, the proprietors of this kind of package use what they call corn syrup to pour around the honey—or rather, perhaps, a mixture of honey and corn syrup; but every jar of this honey has the matter fully explained by a label, so that every purchaser knows exactly what he is getting. If honey can be procured that will not candy at the approach of cool weather, it would probably be used instead. So far as manufacturing comb honey is concerned, it is both untrue and impossible.

Please read this little slip of paper; and as you read, understand it was clipped from that best of all agricultural journals, the *Rural New-Yorker*. If you think best to notice it in GLEANINGS, do so.

Borodino, N. Y., Oct. 16, 1885. G. M. DOOLITTLE.

S. W. M. Griffin, Ga.—Bishop Clark, of Rhode Island, in a late New-York paper, says that men, without the aid of bees, now make and sell "comb honey," in which neither wax nor honey is used; that the comb is made of paraffine, and filled with substance resembling honey. If this is true, it is a death-blow to the honey trade; if not true, the agricultural press ought to contradict it.

ANS.—It is probably true; but the sale of such imitations must be limited to those ignorant of the properties of genuine honey. Such concoctions

will not be a death-blow to the honey trade any more than the sale of oleomargarine and similar imitations has been a death-blow to the dairy business. Of course, such frauds injure fair trade, but they can not destroy it.

Many thanks, friend D., for the clipping you send us. You are right in protesting, when things come to such a pass that men so well posted as the managers of the *Rural New-Yorker* should print such things. I refer to the single expression in their answer, "It is probably true." Now, friends of the *Rural New-Yorker*, and the rest of the agricultural press of America, if nothing else will satisfy you that you are misled and humbugged, I will pay \$1000 to any man or woman who will show me an establishment where they make and sell comb honey in which neither wax nor honey is used. Now, will our friends of the agricultural journals please be as willing to put down a damaging slander as they have been to give it publicity? They can, any of them, easily satisfy themselves as to whether I am good for the offer I have made.

To show the estimation in which fraudulent bee-keepers are held by the different bee-journals, and by apiarians as a class, we have only to clip the following item from the very next column of the *Tribune* from which the extract on preceding page was made:

Mrs. Lizzie E. Cotton, West Gorham, Maine, is referred to as a "fraud" by *The Industrial Journal*, which states that all the apicultural papers reject her advertisement, and accuses her, among other delinquencies, of having "advocated feeding bees sugar and calling it honey."

A BEGINNER'S EXPERIENCE.

SOMETHING FROM THE PLACE WHERE MR. LANGSTROTH LIVES.

I HAVE a few suggestions regarding bee-keeping, and I thought I would submit them to you for your opinion. In bee-keeping I do not claim to be any thing but an amateur. Three years ago I bought one swarm from Bro. Mc Cord, of this place. By close attention, and the assistance of the A B C, I got along finely, losing but one swarm in hiving. Last fall I closed the season with 32 swarms in good condition. I was called away from home in October for some three weeks, and business was pressing me so close I did not find time to look at bees again until January, when on opening I found two swarms starved to death, and several short of honey; but I began feeding strong, and pulled them through till April, when they began to drop off, and continued to until I had only five stands, and they in a weak condition. One of them was queenless. I succeeded in saving the five, and now have increased them to fifteen. All have laying queens, and, as father Langstroth says, my chances are good to pull them through by a little feeding.

I came near being a blind bee-man a couple of weeks ago. I found that the moths were working in some of our frames, and concluded to sulphur them on a large scale, so I gathered up seven Simplicity hives, leaving the lower two empty. I then placed a coal-oil cook-stove in the bottom of the hive, with a small iron vessel to hold the sulphur. The sulphur part was a success, of course. A col-

umn of nine Simplicity hives, one on top of the other, with a cover on the top, made a splendid smoke-house. So far, so good. I took my hives down, and found the moths all dead. I then put the frames away; but when I went to put the stove away it would not move. I think in raising the stove out of the bottom hive I threw the flame down in the stove, which caused the explosion. I was burned pretty badly on head and face, but my eyes were not injured, though my eyelashes were singed. I would advise all persons to put out the flame entirely when they attempt to move a stove. I shall the next time.

I send you a sample feeder. A bee can not drown in it. You can use it outside or inside of hives. You can regulate the flow just as you want it. You can use it to furnish water inside of hives, when you are feeding sugar; and the beauty of it is, almost every home in the land has feeders on hand. I send you a small one for sample. I have them up to a quart in size. If you wish a freer flow of honey, you have only to take the scissors and cut a few more notches, and bend those back. I send you one more miniature sample of my winter feeder, embracing the Hill device for clustering, and feed at hand in shape of candied sugar. I also claim that the candy will absorb some if not all the moisture, which is so damaging to bees, and also keep the candy in better shape for food. My object in dividing the sugar-frame is, that when one portion is taken out, by having a duplicate mold you can make another cake of candy, and insert it when needed. The first expense would be trifling; any bee-keeper could make the frame and the mold to run his candy blocks in. I think by using this, if extremely cold weather should catch a swarm in a part of the hive where honey is scarce, they would have feed at hand. If hung in the shape of the Hill device, would it not tend to cluster them more in the center of the hives? This feeder is intended to cover all the frames in the hive. I have put a portable portico to some of your chaff hives, to rest the feeder on, and to others a simple rest for feeder.

Father Langstroth was out yesterday, and says my stocks are in splendid condition, and I certainly have the bees. With a little more feeding I am safe. The season has been poor here. One of our largest bee-keepers has lost some stands from starvation this summer.

HORACE WELLS.

Oxford, Ohio, Sept. 2, 1885.

Friend W., I am inclined to think that the oil used in your coal-oil stove was of a poor quality, or such an explosion would not have resulted. I have often fumigated combs in the way you mention, only I had a box at the bottom, with a door in it, so a dish of live coals could be set in through the door, and a roll of brimstone afterward thrown on the coals.—The sample feeder you send is only a modification of the Haines feeder, shown in our price list and A B C book. A glass tumbler inverted in a saucer will answer the same purpose, only you can not snip into the edge of the tumbler with a pair of scissors, as you can a tin cup or tin can. I will explain to our readers, that the winter feeder is a little frame with partitions across, and the space between the partitions is filled with candy. This might have some advantages, but lumps of candy

laid on top of the frames answer almost as well. We are very glad indeed to get a word from our good old friend Mr. Langstroth, and rejoice that he is able to be out among the bees.

BUILDING UP NUCLEI IN FLORIDA.

IS A QUEEN'S PROLIFICNESS IMPAIRED BY KEEPING HER CONSTANTLY AT WORK FOR MANY MONTHS?

I HAVE received and read GLEANINGS for Sept. 15. I hoped to see an article in it by an experienced bee-keeper, on "Building up Nuclei;" but as I am disappointed, I shall ask you to give me foot-notes in reference to a few questions.

Suppose I want to increase my number of colonies. After building up a nucleus to a full colony, then dividing that colony and keep on feeding till it builds up again, then dividing that colony again, will the old queen continue laying as well as at first, or does she need rest? If she will not lay as well, or needs rest, how many divisions would you advise?

Beginning to feed a nucleus a small amount of sugar, and increasing the amount as it increases in bees, what amount of sugar do you think you would be apt to be feeding by the time it gets to be a full colony?

Suppose it is summer, or think of me down here in a summer land by the way, I want to name my apiary the "Summerland Apiary," if you do not know of any by this name, and you wish to stop increasing, would you stop at once, or would you diminish the feed gradually?

QUESTIONS FOR MR. DOOLITTLE.

In GLEANINGS for Aug. 15, on page 557, in the last two sentences you speak of introducing virgin queens. Now, under this same circumstance—as introducing a laying queen would certainly be of advantage—do you not introduce laying queens when you have them on hand? If not, why not? Are the bees more likely to kill a laying queen? Would you advise a bee-keeper to follow the plan of introducing laying queens when he has them under the above circumstance? I work my bees for comb honey, and like your opinion on any thing relating to the working of bees for comb honey.

L. W. GRAY.

Troy, Fla., Sept. 25, 1885.

Friend G., I have never been able to see that a queen was injured, or made any shorter-lived, by keeping her at work continually. Even the queens that I kept laying through the winter, in my greenhouse experiments, seemed to lay just as well when spring came as those that had had a rest.—In regard to the amount of sugar required, it is almost impossible to give any answer, so much depends upon the number of bees you feed, and that depends upon the prolificness of the queen; also as to whether they get any assistance by way of stores in the fields. You can stop increasing at once or not, just as you choose. Cutting off the rations suddenly may make the bees cross for a day or two, but I can not see that it does any harm otherwise.—If you will excuse me for partially answering the question you addressed to friend D., I would suggest that you have not read your A B C

book fully, friend G. Laying queens are always much easier to introduce than virgin queens: and the only reason why we go to this extra trouble to introduce virgin queens is because of the fact that they are always recognized as being difficult to introduce under almost any circumstances. Of course, the same plan would answer for introducing laying queens, but no one would think of going to all this pains when we have established plans so much simpler.

PREVENTING AFTER-SWARMS.

SOMETHING FURTHER FROM FRIEND HEDDON.

ON page 705, Bro. Doolittle rather chides me, and insinuates that I am prone to blind adherence to certain petted plans. I hope and trust I am not guilty of any such non-progressive tendencies. I mean that my future works shall prove that I am not. Bro. D. thinks I am too conservative, because I do not at least try his additions to my plan of preventing after-swarms. I can not agree with him regarding the cause of my refusal to test the said additions. The real reasons are these:

1. As Dr. Miller recently stated, there are certain matters and principles, connected with our pursuit, that a bee-keeper of average intelligence and considerable experience can correctly decide upon, without troubling himself to put to practical test.

2. I do not need to test the speed and efficiency of additions and complications that are in no way needed.

The plan, as I have heretofore given it to your readers, being speedy and simple, worked perfectly with me, with many colonies, and in different seasons; and had it not, you may be sure I would not have presented it to the public. Many have been the private reports regarding the success with it; and I am of the opinion, that, while it may be true that it is one of the methods that will vary in varying localities, still the usual cause of failure is due to imperfections in the detail manipulation.

Perhaps in Bro. Doolittle's locality his bees are not working lively in the fields from hives that have cast prime swarms seven days previously, and he, having absorbed the *spirit* of the plan, wittingly added the precautionary measure of making the removal of the old colony, only when the young bees were out for their exercising and localizing flights. Thus by the use of his native tact and clear understanding of the principles of this method, he can now say, with the rest of us, "Success is mine," incurring no added manipulation, only the extra care of watching for the exercising flights above referred to.

Bro. D.'s "explanation" of where my old colony gets bees with which to form these second swarms is not at all satisfactory to me. My bees never act as he describes, in this locality.

My experience in manipulating bees, and the implements connected with them, tells me, without any practical tests, that my plan, when hampered with his additions, as given on page 556, is no improvement over allowing the old colonies to cast their after-swarms, and our hiving them, as of old. This is true of any apiary as well equipped for natural increase as are my own.

Regarding the "chaff hives" and "Simplicity

frames," as mentioned by Bro. D. on page 705, he does me injustice. Three times I have tested tenement hives—twice on an extensive scale. I have never opposed the Simplicity frame. Who would be so weak as to imagine a practical choice, in point of principle, between frames $9\frac{1}{2} \times 17\frac{1}{2}$ and $9\frac{1}{2} \times 17\frac{1}{2}$? Certainly, no one. I once opposed calling the latter size the *standard* Langstroth frame. My grounds were well taken, and conceded; and to-day said frame is known by its own true name, the "Simplicity frame."

You may rest assured that the readily movable shade-board and weight (stone), "readily movable," honey-board, and non-erasing crayons, will all stay by me, till some one points out something that is better, when expense, dispatch, and profit are considered.

JAMES HEDDON.

Dowagiac, Mich.

May I suggest, now, friends Heddon and Doolittle, that we let this matter drop before it gets into any thing more like a controversy, for we certainly have no space to spare? Friend Doolittle did not mean to carry the idea, I feel sure, that there would be any practical difference in the working of the Simplicity and Langstroth frame, although I must confess he left it in a way that would look somewhat so.

CLIPPING QUEENS.

HOW TO MARK THEM, ETC.

FOR three years I did not practice clipping my queens, and I hardly ever had a colony to swarm; but we had more or less trouble in hiving the swarm, in our endeavor to get them to cluster, or to get them down and in the hive. I remember on one Sabbath afternoon, while I was at a relative's near by, that a younger brother came for me, saying, "George, the bees are swarming!" On getting home I found others of the family trying to keep them from absconding, by throwing water, cloths, sticks, and whatever was most convenient, among them, all to no purpose, for they seemed bound to go away. I joined with the others, and after much hard work we finally got them settled on a fence-post at the further end of the lot, and with much difficulty we got them hived.

Now, this was not only hard work, but very annoying, as we presented a veritable show to many passers-by who had stopped to watch us, and to our neighbors, as we were where we could be plainly seen from the street in front and from the side street.

On another occasion, before our eyes, almost in our face, out came a swarm led by a queen which we considered the most valuable in our apiary, and off they went like a streak to the far-off woods.

On a third occasion, in May of the first year, I clipped my queens. I had gone on an errand down street, and on coming back I found a swarm in the air, which had just come out; my two brothers were throwing water among them; mother was beating a pan, and a next-door neighbor was ringing a dinner-bell. Well, it was laughable to me, and I did laugh. The queen was clipped, but I had forgotten to tell the folks how to hive a swarm with a clipped queen. I told them to stop; that I would soon hive them, which I did by picking up the queen, caging her, removing the old hive, placing

a new hive on old stand, and as soon as the bees began to return I let the queen run in with them, and all was done.

We now hive all of our swarms in this way, excepting that we sometimes use a swarm-catcher, and know it to be the easiest, quickest, most convenient, and handiest way; besides, we never lose any swarms as we did with the old method. We now have the other folks so instructed, that, if I am absent, any of them can hive a swarm.

We have lost but one clipped queen by swarming, and that one was stepped on by a visitor.

I don't think that the bees are any more disposed to supersede a clipped queen than any other. If they do supersede one they would do it any way, even if she had two full wings.

Laying every thing else aside, there is another very important reason why I would clip my queens, and it is this: That I so clip them as to mark them; and whenever I see one I know immediately how old she is. To mark them I clip the right wing of this year's queens obliquely off; of next year's queens, the left obliquely off; of the next year's queens, the right square off; and of the next year's queens, the left square off. Thus I have my queens marked for four years; and if I had any queen that I wished to keep five or six years, I would clip both wings; and I assure you this would do the queen no harm, as I have had queens with both wings clipped off close to the body, and they were just as good as any others. It is my opinion, that those who clip their queens, and make complaint that they are then superseded, etc., injure them while performing the operation.

REVERSIBLE FRAMES AND SECTIONS.

Although many of our best apiarians use reversible frames, I can not see that, in my method of manipulating the brood-frames, it would be of any benefit to me. I send you to-day a sample of our queen-excluding honey-board. You will notice that the slots are just $1\frac{1}{2}$ inches from center to center. I space my brood-frames just the same. I make my sections $1\frac{1}{2}$ inches wide, and my section-rack reversible, which I set directly on the queen-excluder, which lies directly on the frames; thus we have no bee-space, but get our sections as near the brood as possible. When the sections are about half full I reverse my rack, thus getting the comb built as firmly to the bottom of section as to the top. This is of much importance to the bee-keeper who sells his honey away from home, as it is not nearly so liable to break down. It also presents a much finer appearance.

I beg leave to differ with Dr. Besse and Wm. F. Clarke, although they are in the senior class, both as regards age and experience, while I am in the junior, in the matter of having our colonies go into winter quarters small instead of large and strong. My experience has taught me to have strong colonies in the fall, if I wish to make the most profit from my bees the next season; and here I would caution beginners in regard to this matter, and say, always keep your colonies strong.

I heartily indorse sister Culp's method of setting away full combs during the honey season, to replace empty ones in the fall.

GEO. F. WILLIAMS, 29-77.

New Philadelphia, Ohio, Oct. 8, 1885.

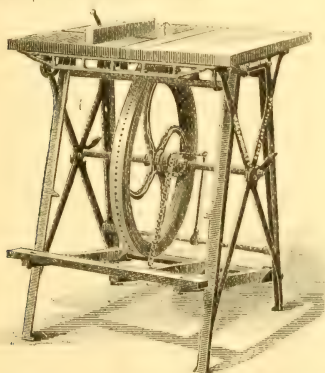
Thanks, friend W., for your sample of queen-excluding honey-board; but I can not see that your arrangement gives us

quite the facilities which are offered by a reversible frame. The board is not materially different from the Hutchinson honey-board, except that the slots run the whole length of the honey-board. Our objection to this plan was, that so long a slot, and also so long a strip of wood between each two slots, made the possibility of variations in the width of the slot much greater; that is, these narrow, slender pieces of wood are much more liable to twist or sway a little than if stayed every two or three inches.

FOOT-POWER SAWS FOR BEE-HIVE MAKING.

STILL FURTHER IMPROVEMENTS JUST BROUGHT OUT BY W. E. & J. BARNES.

ALTHOUGH foot-power is hardly sufficient for making bee-hives in any considerable number, yet such machines will always prove a boon to nearly all who are just commencing in bee culture, or who are located in places remote from power-mills. Our enterprising friends who make the machine shown below have, I believe, for years taken the lead in machines of almost all kinds to be worked by foot-power. Although we have not had the new machine yet so as to test it, we judge by the engraving and their description that it is ahead of anything heretofore in the market. We can furnish them at exactly the same prices we have been selling their old style; viz., \$35.00 for the saw as shown below, or \$40.00 with the scroll-saw attachment. The latter is needed but little if any for plain hive-making. From the above prices we can make a discount of 5 per cent where cash accompanies the order. We also include a cloth-bound A B C book with each machine, as it contains very full directions for using the foot-power buzz-saws. Below is a cut of the machine, and explanatory remarks by the manufacturers:



IMPROVEMENT IN THE BARNES FOOT-POWER SAW.

This improved combined saw will take the same attachments, in substantially the same manner of our old combined; viz., the scroll-saw-boring attachment, and the cutter-heads. The improved

machine is the result of our experience during the last ten years in foot-power machinery, and we believe it is safe to say that there is little room for further improvement. We have put out a considerable number of these machines, many with those acquainted with our old style, and in every instance we have expressions of satisfaction. The peculiar arrangement of parts avoids any strain on belts to cause friction, and yet there is no slipping of belts. The machine runs without noise, and has great power to execute the work. The gauges and adjusting parts for the various kinds of work to which it is adapted are all handy, and easily managed. For bee-keepers' use we believe it to be all that they can ask, and on our regular terms of trial. None will be returned because they fail to do the work. We still sell our machines subject to trial, asking no one to keep any machine that is not suited to his use, after he has tested it in his shop.

W. E. & JOHN BARNES CO.

Rockford, Ill., Oct. 17, 1885.

DO MARTINS EAT BEES?

DRONES, BUT NOT WORKERS, THE VICTIMS.

IHAVE been reading in the last GLEANINGS a complaint about martins eating bees, and wish to state that it is a well-authenticated fact that they do eat bees. But, what kind of bees do they eat? Has it ever been proven that they eat worker-bees? I have a nice martin-box in front of my house, and it is filled with birds every season, and my apiary is on the other side of the house. I have given much time during the past season to determine, if I could, whether they caught workers or not, and I am not able to say that they do. One thing I have demonstrated, that when drones are out during the last half of July and August, that the birds are out also, and I have seen them take drones, one after another in quick succession, but I have never seen them touch a laden worker, though they were flying right among them where there were hundreds coming in.

My bees have done better since I have had martins than ever before, and I think they are a help to the bees when they are driving out drones, if not at other times. I thought, however, that they might, through mistake, pick up a queen, and so be a damage to the bees; but I don't know it to be a fact. I think it is about the same with king-birds as with martins. I watched some during the past season. They would take their stand on a tall dead-topped tree near my apiary. I took my gun, and went out to investigate, intending to bring down the first one that took a laden worker, and so be sure in relation to the matter. But I didn't have occasion to shoot. It is singular how far they will sight a drone. I have seen them leave their perch, and, with almost lightning speed, go from 60 to 75 yards, when, snap! you would hear their bills, and another drone is not. The above is the sum and substance of my observations during the season just past.

We had a splendid yield of honey in early spring from soft maple and fruit-bloom. I took 100 lbs. in 2-lb. sections from 4 swarms before the first of June, and the brood-nest was as full as it could be packed, and I think it hindered the queen materially in brood-rearing. If I had had an extractor, I think I could have taken 500 lbs. during that early flow, and my bees would have been better off for it. Since

then the yield has been very light. They have stored a little since buckwheat and goldenrod came into bloom, but they will need it all, and many will have to be fed to carry them through the winter.

Oneco, Conn., Oct. 5, 1885.

T. B. MOWRY.

Friend M., this thing has been up before, a good many times, and I should be glad to think you are correct; but if I remember rightly, a good many reports at the time the matter was discussed showed that the crops of the birds contained *bee-stings*. The sting could be, of course, readily identified under the microscope, even if they were entirely mashed up. See "King-Birds," in the A B C book.

ARTIFICIAL QUEENS.

Are They Inferior to those Raised under the Swarming Impulse?

THOSE RAISED LATE IN THE SEASON, LONGEST LIVED.

MR. ARWINE shows by his tabulation that queens long in growing are longer lived (p. 587). So far he is without flaw, and no man can show argument against him without using smart catches that are not proof.

I can trace back, by record, every queen I have raised since 1874, their disposal, life's length in most cases, and other items of their history. I have averaged over 60 nuclei, shifting the queens as fast as laying commenced, and it is not so strange to have 5-year-old queens, because I have as many as 25 of that age already. Four and three year olds are to be found; but the singular part of all is, those queens are all out of the August and September raised queens. They are among those the least inclined to swarm, gentle to handle, and are good steady layers. The May and June queens are as bad swarmers as the swarm-cell queens, and are as short lived as the October queens. I have averaged setting up my nuclei May 12, the earliest being the 3d, the latest the 18th as a season start; usually, $\frac{1}{2}$ to $\frac{1}{2}$ the number I intended to run through the season, bringing the number up to full before the last of June. Give me, for my own use, queens from cells started in 5-frame nuclei; let them build and cap their cells promiscuously, then destroy them just at night, and give them some eggs, taking away the center comb; and though all the queen-breeders in the world speak against it, I am forced to believe what facts prove to be so under my eyes.

There is one queen coming 6 years old in Aug., 1886, that has never tried to swarm. She was clipped as soon as she began laying, and has been in the same hive she is now occupying, since Oct., 1882. She was weak in bees last spring, but otherwise good. She is the mother of well-to-do daughters to the third generation. How is that for forced, or artificial queens? Close-kept record tells me that the swarm-cell "blow" is very well, but I take my pick out of August and September nucleus cells. I don't find that so many swarm or so many fill the brood-nest with honey. Fall-raised queens get some age before being obliged to make laying a steady business. Hard steady work breaks down all young animals.

17, H. L. JEFFREY.

New Milford, Conn.

Friend J., you have suggested an idea that is at least new; viz., that a queen will live

and do service more years when hatched and fertilized late in the fall, so that she has many months of comparative rest before the great labors of swarming-time. It seems to me reasonable, and we should be very glad of reports from others when they are prepared to give us facts in this matter of much importance.

NATURAL SWARMS.

INTRODUCING A VIRGIN QUEEN, TO PREVENT AFTER-SWARMING.

IF you have no objection to the following, I should like to give to the readers of GLEANINGS, and especially those who, like myself, have had but little experience with bees, a very good way of managing bees through the swarming season—not that it is *new*, but because I find it such a simple and easy way. In the first place, I think we all want our bees to swarm as early as possible; for that reason I don't put the sections on until they really *need* them, which, of course, depends on how soon the lower part, or brood-chamber, becomes filled with brood, bees, and honey. This treatment, I think, induces them to make preparations for swarming. When a hive sends out its first swarm I let them get well clustered, and then hive them in a new hive (new to them), with two frames of comb, and the rest of the frames with foundation. As soon as they are all in, or clustered on the hive, I move them to a new stand, and gently smoke them into the hive.

This, I know, is different from the way many do; but the reason I do not move the *old* hive on a *new* stand and put the *new* hive on the *old* stand, is, it sometimes happens that the bees cluster, and go into the hive all right, but they may not have a queen with them; and if the old hive has been moved from its stand, and the new hive placed where the old hive stood, and if the queen did not swarm out with them, your new colony is queenless, and they can't go back to their old home, for they don't know where it is. If it had not been moved, however, as soon as they found they had no queen they could go back home and try it again. So much for *first* swarms; but let me add, I put all first swarms back after July 10th. Of course, I have after-swarms to deal with. I have each hive numbered, and I have a plat of the bee-yard, using a small blank card to represent each hive, and each card is numbered to correspond with hive, and is located the same as in the yard. It is about the same as going to the bookstore and selecting your reserved seats for an entertainment. When a swarm comes out, and is hived and located, I put the date and the number of the new swarm on the card on the plat, that the swarm came out of. I also put a new card on the plat-board to represent the new swarm, and put the new number, date, and number of hive it came from (double-entry book-keeping). When a *second* swarm issues, I look on the plat-board to make sure it is not a *first* swarm. I watch them until they begin to cluster, and then go to the hive and remove the tier of sections, and cut out all the queen-cells. If they have a tier of sections partly filled, and the flow of honey is good, I put a tier of empty sections (with starters) with *open tops* on the hive first and then the tier they had partly filled, on top. Then I take a well-made nail-keg, with $\frac{1}{4}$ -inch holes all around near the top

hoops, and a board about 14 inches square. Place the keg upside down on the board on the ground near the cluster. Shake the bees on the ground close to the keg, and they will almost always go in readily. When they are all clustered in and on the keg, carry it to the hive the bees came out of, and shake them out in front, and they will go in lively. It sometimes happens that I can readily find the queen in the cluster; if so, I use the Klimitz queen-cage to put her in, and hang the cage in the hive after cutting out the cells, and if they had no other queen in the cluster they will come back and save the bother with the keg. When they begin to come back I let the queen out of the cage, and let her run down the brood-comb.

When cutting out queen-cells, while the second swarm is out it is an easy matter to save some virgin queens, as they will often hatch while cutting out the cells. I keep several on hand; and after a hive has sent out a first swarm, and the excitement is over with, I run a virgin queen into the hive at the entrance. An experienced bee-man told me it would prevent after-swarming, but it has not with me. I have thought it might save a few days' waiting for a queen to hatch. What do you think about it?

I find by managing my bees this way, I get about as much surplus honey from the old colonies as from the new ones. It keeps them better equalized, in better shape for wintering, and saves lifting hives heavy with honey, from one stand to another. By letting the second swarm come out, and then cut the cells, I am not so liable to kill or injure the queen, and I think it better than cutting out all the queen-cells but one as soon as the first swarm issues; for I find it difficult to know which cell will hatch first.

My bees are doing first rate. Spring count, 56; increased to 98, and put back at least 30 swarms since July 10th. The honey-flow has been very good from all sources so far—dandelion, fruit-bloom, white clover, and now we are in the midst of bass-wood, and the goldenrod is coming on in good shape.

C. A. SAYRE, 56—98.

Sargent, *J* Iowa.

Friend S., your plan of preventing after-swarms is like many others—sometimes it answers and sometimes it does not; but I should think it would do in the majority of cases; that is, if the bees accept a newly hatched queen, they will probably permit her to tear down all queen-cells under way.

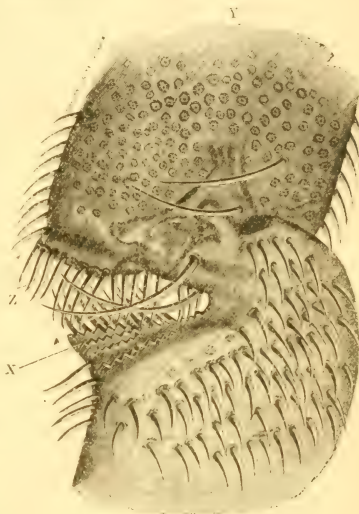
THE MECHANISM AND STRUCTURE OF THE BEE'S HIND-LEG JOINT.

HOW THE BEES LOCK THEMSELVES TOGETHER WHEN CLUSTERING.

SOME of the readers will perhaps remember, that a few years ago I made a cross-section of the bee-sting. This was the work of a whole week of hard, vexatious labor. No one but one who has handled the microscope, and made such dissections, can understand the difficulties that attend it. The sting is made of a hard horny substance—so hard, indeed, that it will break nicks in the best razor steel when cutting transverse sections. It is much finer than the finest cambric needle; and when a cross-section is obtained, an idea can be formed of the minuteness of

the work. But with the leg of a bee we do not have such difficulties to encounter; and, strange so say, as far as I can learn no one has fully investigated the structure and true relation of the different parts of the bee's legs to each other. As I have been at school for the last four years, I have not given it much study myself.

To me this is a most fascinating study; and now that a light form of the old microscopic fever has returned, I give you the results of a part of my investigation, as brought forth by a Baush & Lomb microscope.



HIND-LEG JOINT OF A BEE.

The first thing, then, that we take up is the hind-leg joint, and its purpose, a cut of which appears above. It is drawn as it appeared in my instrument, and is magnified 10 diameters; in other words, it appears 10 times as long and 10 times as wide as it really is. At X you will observe that the lower jaw, so to speak, is serrated by rows of what appear to be teeth. The opposite side of X, not shown, is serrated in the same manner. On the upper jaw is a row of sharp spurs, Z, somewhat coarser than those seen below. Just above the jaws, at the base of what is called the tibia, is something that looks somewhat like a pig's head with his mouth open; but this in reality is a series of very powerful little muscles which give motion to the joint. The question now naturally arises, What is the office of these teeth and spurs, as seen in the jaws? I confess I am not quite able to determine, without more study than I have been able to give it, so far. Possibly they may serve to masticate or pulverize the pollen so that it may be more easily patted down in the pollen-basket higher up, as at Y.

HOW THE BEES LOCK THEMSELVES TOGETHER IN CLUSTERING.

However, I feel pretty tolerably certain that I have discovered one purpose of this peculiar joint.

While looking through the microscope at the narrow neck, as it were, connecting the two parts of the leg, it occurred to me that it was around this same narrow neck that the bee, when clustering, threw his two little hooks or claws. These hooks, or claws, resemble somewhat the talons of a hawk or an eagle, and I may in a future number give you a drawing of the bee's foot. It is easy, then, to conceive that when a bee's foot has grasped hold of this neck, just as you would inclose it with your thumb and finger, his foot will be securely locked fast, if the other bee close this jaw by straightening out his foot. Feeling assured that the bees ought to link together in this fashion, I went out into the apiary to see if it were true. I was not surprised to find that such was actually the case. The apiarist and I examined a number of clusters of bees, and in almost every case we found, when linked together, the fore feet of one bee fastened firmly to the hind-leg joints of another bee. We then strung a lot of bees together in the form of a chain. The result was, that one bee, when linked in the manner described, would hold a hundred or more of his companions, seemingly, too, without any effort. To test the matter still further, I picked a bee up by the wings and allowed him to grasp hold of another bee. My object in this was to see where, if given the preference, he would catch hold. Running his fore legs down the hind legs of his companion, he grasped hold of this particular joint, and seemed to say, "Now pull me off if you can." We tried this experiment a number of times, with like results, and at times it *did* seem as if the legs of the little fellows would break, so securely were they locked. I have since been out to the apiary, this time using a magnifying-glass, and I now feel fully satisfied with the results. It is known to be a fact, that a few bees around a limb will hold as many as six or eight pounds in a swarm. Not only that, but the bees will sustain this enormous weight sometimes over night, and even much longer if necessary. Unless nature had wisely made such provision as this ingenious little vice it would be impossible for so few bees to hold such a weight.

Perhaps I should mention, in this connection, before leaving the subject, that bees do not always lock together as I have described. When the strain is not great, and the bees few, it often becomes necessary for them to grasp hold of any portion of their comrades that seems most accessible. In such cases they may be holding to each other by their claws; but if I am correct, they never use their mandibles in holding to each other.

When favorable opportunity presents you will be amply repaid in observing how ingenious this contrivance of nature is. Get the juveniles started, and possibly they may add some hints. I shall also be glad of kindly criticisms, and any suggestions that Prof. Cook may feel disposed to give. I have scanned his book quite carefully, but find no mention of this particular feature in the hind leg; though he suggests that the flute in the bees' fore leg may answer for holding on when clustering.

ERNEST R. ROOT.

P. S.—Father has suggested that the bee may put his whole foot, or, what Prof. Cook calls the *tarsi*, in the jaw, and that the claws grasp hold of the spurs or hairs. There are three little joints in the *tarsi*, forming little links, which are conical in shape. This, seemingly, would afford a good opportunity for a strong connection when the jaw closes

over it, and the bee may do so on occasion, but I feel pretty well satisfied that they prefer to grasp the little neck referred to above.

E. R. R.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

FROM 15 TO 29, AND ONLY 100 LBS. OF HONEY.

I SEND in my report up to-date; viz., 15 colonies, spring count. From them I increased ten by natural swarms, three by artificial swarming, one by building up from a two-frame nucleus started in May last, making at this date 29 strong colonies, as far as bees are concerned, but not in honey, but self-sustaining. From the 29 I received only 119 one-pound sections, some not full, making 100 lbs. of honey up to date—the poorest yield I ever had, and not a very good prospect for a good fall flow of honey. But I am not out of heart, and not out of pocket, for my bees always pay for all the expense I put upon them, even if I do not get a flow of honey.

TWIN QUEENS.

Have you ever heard of twin queens, or two queens in one cell? I never have, but I saw such in one of my hives last June. I wished to raise some queens for my own use, so I removed a queen from one of my hybrid colonies; after nine days I removed all the queen-cells, and gave them a small strip of comb with eggs. They formed four queen-cells on one side of the comb, and two on the other, with one very large one which attracted my attention, so I cut into the cell and found two queens. The cell was single, except a small strip at the bottom. I wished afterward, I had put the cell in some other hive. The queens were not fast together. I suppose you will say I was mistaken; but I say I am not, for I had both queens in my hand at the same time.

JOSIAH EASTBURN.

Fallington, Bucks Co., Pa., Aug. 19, 1885.

I do not know that I ever before heard of two queens in one queen-cell, friend E.; but I can readily imagine that two larvæ might by accident grow up side by side.

HOUSE APIARY, HOW TO CONSTRUCT; FRIEND HOXIE'S PLAN.

I will give you a description of a house apiary which I have had in use about three months, and am so far well pleased with. It is 12x24 ft., 8 ft. high, boarded up and down with patent siding running up through the roof-boards, making it bee-tight. I have doors in each end alike. First a door with two large panes of glass which swing inward, then a screen-door, same size, which opens outward, with hinges that hold them shut or open. Outside of this a batten door made of patent siding, which shuts under the door cup, and wide and long enough to protect the others from rain or snow. My hives stand on the floor, and are Simplicity hives without bottom-boards. The entrance through the side of the house is the same size and shape as the hive, with the alighting-board nailed to the house outside. My hives stand four inches back from the wall. Over this passageway I have tin, bent and tacked to the floor. My hives occupy a space of two feet. My plan for wintering is to fix the inside of the hives in the usual way the Simplicity hives are fixed, and then put up boards back of the hives and fill in with dry leaves. I do not know but the glass doors might be left out. I have

not needed them yet. I am well aware that a house apiary has its disadvantages as well as advantages. The alighting-boards, and over the entrance, I have of different colors. H. S. HOXIE.

Holloway, Lenawee Co., Mich.

Very good, friend Hoxie; but I am afraid that your house-apiary, like all of those belonging to the rest of us, will in a few years be standing idle and vacant. There is one trouble with house-apiaries, that I don't exactly see how to get around; that is, that when bees get out into the room they must be got back into the hives by some means. Of course, they will go back themselves if you give them time enough, and leave the doors or windows open. If you leave the doors or windows open permanently, then you have got to sweep the floor, and keep it clear of rubbish, etc., which we don't have to do while the hives are outdoors.

IS SUGAR FROM A BUILDING THAT HAS BEEN BURNED DOWN, INJURIOUS?

Last Thursday morning there was a store containing a large quantity of granulated and maple sugar, burned in this village, and the honey-bees are there in large numbers, among the burnt and unburnt sugar, and that, or something else, has set my bees to fighting, and the question is, What effect is this sugar going to have upon the bees now, and in respect to wintering?

CAN A NUCLEUS BE FED AND CONFINED IN A WIRE-CLOTH HOUSE?

Another question is, in a nucleus swarm in a wire-cloth house, can they be fed with granulated syrup, and any kind of meal for pollen, and not be permitted to roam at large? If a colony of bees is shut up for a number of days, in case of fighting or any other cause, must they have water put into the hive? J. J. HILL.

Barton, Vermont.

Friend H., I should be afraid that the burnt sugar would give the bees dysentery as soon as they are confined to their hives. It will depend considerably upon how large a quantity they gathered, and how badly it was burned. I would examine the hives, tasting of the stores they have gathered; and if very much of it, I would lift out the combs containing it, and save them for spring feeding. We should like to have your report in the spring, as to how it turns out, in any case.—Having bees fly and take feed in confinement, is a subject that was up considerably for several years while we were practicing fertilization of queens in confinement, and also while trying to winter bees in a greenhouse. Briefly, the bees can be taught to fly around the room and go back into their hives; but a good many of them get on the glass, or against the wire cloth, and die. We have record of a few successful experiments.

SELLING HONEY AT THE COUNTY FAIR.

I attended the county fair at Valparaiso. I had a good time, stirred up the bee-men a little, and succeeded in drawing attention to the progress of the pursuit. I was surprised to find how large a number of people "used to keep bees." "The woods" seemed to be "full of them." I live some 15 miles from the fair-grounds, so I took only 250 lbs. of comb and extracted honey. I tried selling "honey on the stick," also all the extracted honey one cared

to eat, for 5 cts. I furnished crackers with the same, and met with moderate success.

The pound sections of comb honey put in the paper boxes proved to be the best-selling package. The chief obstacle to selling honey at a fair is, that people don't like to carry it around in the crowd; and when they start for home they don't think to stop for the honey. I retailed some \$10 worth on the grounds, and disposed of my remaining honey to grocers. Please report through GLEANINGS the success you met with at your county fair—the amount of honey sold, etc. I think it will be of interest to many. I distributed sample copies of GLEANINGS and price lists where I thought they would do any good. DWIGHT FURNESS.

Furnessville, Ind.

Friend F., we succeeded in selling, at our county fair, between 400 and 500 lbs. of honey, mostly in five-cent packages; but as we made only about a cent a pound on it, it did not pay us for the time and trouble, except in the way of advertising; and I consider it a good investment, for our honey trade has been considerably increased since then. Our customers seemed to prefer the glass honey-pails. We had the honey in the iron-jacket cans, and poured it into such cans or pails as they selected, just as fast, or a little faster, than it was sold. We did not try "honey on a stick," for our apiary of 200 or 300 colonies was less than a fourth of a mile away, and we feared it might create an "on-pleasantness."

SWARMING WHILE EXTRACTING.

A few days ago, during our basswood flow, while putting back the frames into the upper story on a colony from which I had just extracted the honey, a large swarm issued. I was on hand at the very beginning, and the first impression was that they had lost their queen, as they were all running hither and thither, as I have seen them doing when such was the case. But there was the difference, that all the bees were uttering the swarming-note, and soon began to pour out of the hive pell-mell. When bees get the swarming fever, it seems as if neither extracting nor any thing else would prevent them. ROBT. H. SHIPMAN.

Cannington, Ont., Canada, Aug. 3, 1885.

Friend S., I once witnessed exactly the phenomenon you mention, and the sight was a wonderful one to me; for it was almost a glimpse behind the scenes, to see just how bees manage when they start out on the "war-path," or, perhaps I should say, "secede" from their old home.

USING PLAIN SHEETS OF WAX AS A SUBSTITUTE FOR PRESSED FOUNDATION.

Perhaps it will be of interest to some of the beekeepers who are not able to buy a foundation-mill, and do not like to pay so much for having their beeswax made up, to know how we make our starters. We do not use full sheets of foundation in our apiary. I put the big dish-pan on top of the stove, with about two gallons of boiling water. Add the beeswax, but do not let it get very hot—just so it is melted.

Have a pail full of very cold water, on a chair near the stove. Take a piece of glass the length you want your starters; dip the glass in the water and then in the wax, and back in the water very quickly. If you are quick enough, the wax will

leave the glass, which must be clean and cold. You cut the strips just as wide as you like, and they are ready for use. The bees will work on them just as well as if they were pressed. We have used them for two years.

We have 50 colonies of black and albino bees. Our bees are doing better now than they have all summer. We have sold only about 200 lbs. of comb and extracted honey. MRS. ALMIRA HAZEN.

Pleasant Mound, Ill., Aug. 29, 1885.

Thank you, my friend; but the idea of plain wax sheets, made by dipping on glass, is very old. In our early volumes the matter was considerably discussed; and although it will answer tolerably, plain sheets were soon laid aside for regular foundation. We think if you will try these sheets, however, by the side of well-made foundation, you will notice quite a difference. They are also more expensive, because they contain more wax to the square foot.

SOME QUERIES IN REGARD TO BASSWOOD-TREES.

Will you please answer the following questions?

1. How many years are required from the time basswood seed is planted, till bees begin to work on its blossoms?

Ten or fifteen years.

2. How many years' start would one have by purchasing trees of you which are 10 ft. high, in preference to seed?

Five to ten.

3. How many trees are required to keep 100 colonies busy?

Can't answer; perhaps 100 large trees.

4. How many should be placed on an acre?

It does not matter much. We have 4000 on 10 acres. See A B C.

Cokeville, Uintah Co., Wyo. CHAS. F. CLARK.

MORE ABOUT BORROWING TOOLS; A BUZZ-SAW OUT OF AN OLD FANNING-MILL—HOW TO CONSTRUCT.

While reading GLEANINGS I was very much pleased in the way you express yourself in regard to borrowing and lending tools, and would say that I have been annoyed that way myself. Although a person may have to borrow sometimes, as a rule it can be avoided; but I think your article is to the point, and I would advise every reader of GLEANINGS to read it carefully, and act upon it, for it will save hard feelings among neighbors. But I say, if neighbors must borrow from one another it would be best to take the best possible care of what they borrow, and they would then feel more like lending to one another again.

As I intended to give a description of my circular saw that I made for sawing hive-stuff, I will now proceed to do so. I made the frame the same as any circular-saw frame, with tilting table; but having an old fanning-mill gearing I attached it to one side of the frame, to connect with a shaft under it; and on this shaft I put a belt-wheel 18 inches in diameter, with 1½-inch flat belt running to the saw-mandrel. I turned my mandrel and shaft, and made the whole machine myself, and it cost me but little outside of my own labor. I use a 5-inch saw, and turn and feed myself, and can tell just how fast to feed, to correspond with the power. It is a very handy saw to have, to do odd jobs with, even if you have a power saw. I sawed some nice sec-

tions from green frozen poplar, which are as white as snow. They are not so white when sawed out of seasoned lumber. R. B. KIDDER.

Columbus, Wis.

Thanks, friend K., for the suggestion you give in regard to the hand-power buzz-saw. I believe this is the first time the idea has come up, of turning the saw with one hand, and feeding it with the other; but I have no doubt it can be done, and that such a machine would be a great help in many instances.

WINTERING ON COMBS WHERE THE OLD BOX HIVE, UNPROTECTED, CAME OUT AHEAD.

For the first time I say, "How do you do?" I have just finished reading GLEANINGS for Oct. 1st, and could not do without it now. I am a young hand at the bee-business. I can get along in summer, but the winters are hard. I have had bees for three summers only. I commenced on a small scale, and am still working on the "small." Last fall we had built up to 11 colonies, but saved only one. It was in an old box hive, and stood out all winter with no protection. The others I moved to a shed. We had a splendid white-clover honey-flow and a light flow from goldenrod and Spanish needles. I now have four colonies. They have 50 or 60 lbs. of surplus in 12-pound boxes. How would it do to leave one of those boxes over each colony for winter? Would they take it down into the brood-chamber if they needed it? M. L. BREWER.

Philo, Ills., Oct. 12, 1885.

Friend B., I think your old box hive probably had old and tough combs, besides being well ventilated. The rest were probably on new combs, and may be not very strong at that. And then on top of it all, you put them in a shed where they probably failed to receive the benefit of the sun's rays. Leaving honey-boxes over the colony, so as to form an air-space for protection from the frost, was advocated considerably some years ago; and in our back volumes you will find a multitude of reports.

"A FISH-STORY"—WHEW!

As you are interested in carp culture, I clip the inclosed from our local paper. I am satisfied the information will be valuable to all who are interested in the carp industry. S. M. PEACOCK.

Lancaster, Ky.

Mr. Jesse Doty relates the following singular occurrence. Mr. Doty is reliable, and no question can be raised as to the correctness of the account: On the farm of William Hiatt, near Hyattsville, in this county, is a large pond, which was, a few years ago, well stocked with German carp. One day last week Mr. Doty went over to this pond to shoot some of the fish. He took his station on the east side of the pond, and soon killed several very fine ones as they came to the surface to sun themselves. The weapon used was a double-barreled shot-gun. After some five or six shots were fired, Mr. Doty noticed a singular agitation of the water on the west side of the pond where there is a slight drain. This agitation finally grew to be a terrible commotion, and Mr. Doty hastened to that side to see what was the matter. He discovered that a panic, caused no doubt by the shooting, had seized the fish, and they were forsaking the pond in large numbers by way of the drain mentioned. That drain extended for only a short distance, and there the fishes actually pursued their way across the grass, their noses stuck straight toward the woods. Mr. Doty ran around in front of them, and after much difficulty succeeded in heading them off and driving them back into the pond. He says there were no less

than 250 carp, varying in size from one to three feet in length that were attempting to effect their escape. Mr. Doty warns all farmers having ponds containing carp not to shoot into the water, since he believes it will surely result in the fishes abandoning their home. He says he was greatly astonished at the ease and celerity with which these fish moved along on dry land.

Friend P., your story is a "fish story," without any mistake, but I think there is something of value to be gathered from it, after all. It is doubtless exaggerated, about as newspapers often do exaggerate; but from my own observation I am satisfied that carp may be frightened so as to be put into a panic, and I think it is likely, under some circumstances, they may desert the water and get out upon the ground, may be some little distance, especially if the ground is wet and marshy. I told you, a few months ago, how greatly astonished I was to see a great fish make his way over the ground near the edge of our pond, with apparently no very great difficulty. Mr. Peirce, in our carp-book, warns us against frightening carp in drawing off the pond, lest they bury themselves in the mud to such a depth they may never get out.

WHAT MAKE OF PERFORATED ZINC EXCLUDES QUEENS?

On page 516 of Aug. 1st GLEANINGS you ask if it is the D. A. Jones make of perforated zinc that has successfully restrained the queens. I suppose that it is, as I ordered the zinc of you some 18 months ago, and understood it was Mr. Jones's make; at all events, it is just *right*, as I have never yet in a single instance known a *queen* to get through, and this is my second season to use it.

Instead of using a full-sized sheet of the zinc to cover the whole top of the hive, I use a wide strip of enameled cloth across the center of the hive, of sufficient width to require only 5-in. strips of zinc at each end of the frames, being careful to lap the zinc $\frac{1}{2}$ inch or more on to the cloth. Having used 30 hives this season for both extracted and comb honey in this way, I have not had a queen go above; and in case of necessity in opening a brood-nest, the two strips and the enameled cloth are much easier to remove and replace than the full sheet, besides the *economy* in using the zinc.

I have no fears of losing a swarm *now* while off to meeting or Sunday-school. On Saturday eve I go around to all the *strong* colonies that are at all *likely* to swarm, and adjust a queen-guard to each entrance, and then we *all* go to meeting with as much assurance of saving our swarms as if we stayed and watched them. In only *one* instance have I lost a swarm by being off to meeting, and in that single case I found that I had not fastened the guard properly, so that the force of the swarm issuing moved it away from the hive, when, of course, the queen got out. D. E. BRUBAKER.

Maxwell, Ia., Aug. 4, 1885.

Thanks, friend B., for your report. The zinc you mention was neither the American zinc nor that furnished by D. A. Jones, if I am correct, but some that we imported from England. We have recently received a communication from friend Alley, who has, perhaps, had more experience with drone-traps than any of us, and he is quite emphatic in favor of the imported zinc, although there is but a minute fraction of difference

between it and the Jones zinc, in regard to the size of perforations. We are just now making preparations for making machinery for perforating in our own country, that we may be enabled to save the amount that we have heretofore been obliged to pay in the way of duties and transportation.—I am very glad indeed if any arrangement can be contrived, so that none will have to be absent from church or Sunday-school on account of bees.

A BEGINNER'S EXPERIENCE, WHO LIVES NEAR GEORGE E. HILTON.

I began the bee business by purchasing two colonies of black bees last fall, for which I paid four dollars each; and with the advice and showing of the man I bought of I built two hives to winter them in. They were in Langstroth frames, ten frames to the hive. I built another hive, 3 inches larger, and packed the space with fine dry sawdust, and let the outside hive come up about 10 inches above the inside one, and covered the frames with a cloth, and then put in about a bushel of fine dry sawdust on top of them, and left them standing out, exposed to all the cold of last winter; and I tell you it was the most severe weather ever known here. But my bees came out all right this spring, so I bought seven more. They had been wintered in a cellar, and seemed all right; but before I was aware of it one stand was robbed out by the others. Then I contracted the entrance of the hive, and had no more trouble of that kind. They were all in single-walled hives, so I made all new hives. I now make my outer hives large enough to take about four inches of packing, and am filling them with fine dry pine sawdust. I have now 18 colonies, all very strong. I have taken off about 350 lbs. of comb honey in 1 and $\frac{1}{2}$ lb. sections; and right here comes a question I should like to have you answer.

WHY DO MY BEES CLUSTER OUT?

I made my inside hives to take the Langstroth frame, eight to the hive, or 12 inches wide, according to the recommendation of an apiarist near me who has a large apiary. He told me that 12 inches is better than 15 for wintering; but yesterday I found a set of boxes filled by a young colony, and I took them off, placing the enameled cloth on top of the frames. The bees went in large numbers out on the outside of the hive, and stayed there all night. To-day it has been raining incessantly, and still they are on the outside, in the rain. About 4 p. m. I looked into the hive, raised the cloth, and it seemed to be perfectly full of bees. The question with me is, Is there not room for them all in the hive? For fear there is not, I have placed a set of empty sections on top again; yet if there is not room for them in the hive, how shall I winter them? One new colony made and finished 70 lbs. of fine comb honey in 35 days, and have 30 lbs. more about ready to cap. That is doing very well, I think. I intend to winter them on their summer stands. They were all black bees, but I have introduced two queen-cells and two virgin Italian queens, from the apiary of G. E. Hilton, near me. I did according to his directions; that is, when a new colony came out I let a virgin queen run into the old hive. Was that right, and will it succeed?

HOW TO DETERMINE WHEN A COLONY HAS WINTER STORES ENOUGH.

Please tell me how you determine whether there is enough honey in a hive to safely winter. Do you

weigh the frames with the bees on them, or how do you determine? You see, I know but very little about the business, and want to learn. I know you will say, "Get the A B C book," and I am going to as soon as I can; but all in good time.

H. B. CAMERON.

Newaygo, Newaygo Co., Mich., Aug. 2, 1885.

Friend C., it is quite common for bees to cluster out in large numbers, after removing their surplus receptacles. We usually put on an empty upper story, or an upper story filled with combs. They will do no harm by clustering on the outside of the hive, unless some of them are killed by a cold storm. I have known this to happen several times late in the fall. They usually go in the hive, however, as soon as we have a few frosty nights, and I think you will find there will be none too many bees to winter nicely, if you give them good heavy combs full of stores, in proportion to the number. I would, however, leave the winter brood-nest larger than usual for so heavy a colony, although I have never seen the colony that required more than the space occupied by ten L. frames.—Your question about determining when a colony has winter stores enough is answered by friend Doolittle, on another page, fully as well as I could answer it myself.—So you are a neighbor, are you, of our friend George E. Hilton, whose apia-ry we have so recently had the pleasure of looking at?

BAD ODOR FROM THE HIVES; WHAT CAUSES IT?

The bees seem to find something here that gives a sour smell to their hives. Sometimes you can notice it ten or fifteen feet away. Can you tell me what it is? They seem to be doing well, though. The frost has held off. The nearest it came to one was Sept. 23. The mercury fell to 39 degrees; but now, Sept. 27, we are having hot summer weather, and the bees are improving their time.

G. SCOFIELD.

Ridgeway, Orleans Co., N. Y., 1885.

Friend S. I have noticed something like what you describe, during the fall of the year, when the bees are working on certain kinds of autumn flowers: but I can not tell you what flowers. Perhaps some of our readers can help us.

WAS IT CARELESSNESS, OR THE FAULT OF THE BEES THAT RESULTED IN THE DEATH OF THE QUEEN?

The queen you mailed me on the 23d of July was received all right; but as my bees behaved badly and killed her, I will tell you the circumstances.

I wished to put the queen in a hive where the old queen seemed to be on the decline. I removed the old queen and put the new one in the hive, according to directions. At the end of two days I released her on top of the frames. She flew, and I thought I had lost her; but on looking through the hive, in a little while I found her balled. I caged her again, and left her in the hive two days more, when I again released her. She ran down into the hive. I immediately commenced searching for her, and in a few moments I found a bunch of bees, nearly as large as a goose-egg; and when I got them out of the hive, and separated, the queen was dead. On the second day after the queen was put in the hive, I cut out about twenty queen-cells, and on the fourth day about ten; to-day, 10 days after, I removed ten more. I expect now to give them a cell form-

ed on brood taken from a queen which I purchased of you in June. I should like to know if the fault was my own, or were the bees simply determined to raise their own queen?

O. P. PHILLIPS.

Amo, Ind., Aug. 3, 1885.

Friend P., the behavior of the bees would indicate to me pretty clearly that they had some sort of a queen already, were it not for the fact that they started so many queen-cells as soon as the queen was dead. I suppose we shall have to explain it by calling it one of those exceptional cases where a colony refuses to accept any queen.

MORE ABOUT SWEET CLOVER AS A HONEY-PLANT.

In your foot notes on my article on sweet clover you say, "But 1000 lbs. from one acre during four weeks seems to me almost incredible."

It does seem like a great amount, yet I know I got over 500 lbs. of surplus, or box honey, during the sweet-clover flow, and I believe 35 to 45 colonies would store in brood-frames, and use in breeding, during 4 weeks, not less than 500 lbs. What do you think they would use? Of course, that part of it is guesswork with me.

The spider plant may drip with honey, and yet not produce one-fourth the amount of honey that sweet clover would, for two reasons. First, the clover secretes honey all day long; the bees may visit each blossom a hundred times a day, and get a small amount of honey each time, while the spider plant is open only a short time. Second, the clover would produce perhaps a thousand times as many blossoms on the same amount of ground as would the spider plant. My clover grew from 5 to 7 feet high.

As to bees getting honey from other sources than sweet clover during the time, I would say that other bees within two or three miles of me gathered no honey during the same time. I can not believe my bees gathered from any other source than sweet clover.

E. W. FITZER.

Hillsdale, Mills Co., Ia., Oct. 7, 1885.

Friend P., very likely it may be a hard thing to tell where the honey did come from; but I hope you will excuse me for still feeling quite certain that such a quantity could not have come from the area of sweet clover you mention. We have had tolerably heavy flows of honey, when we could not find *any* thing that seemed to justify the amount that came into the hives daily.

MORE IN REGARD TO RASPBERRIES AS A HONEY-PLANT.

I have just been reading the articles on raspberries, in August GLEANINGS, and will give you our experience. I consider raspberries our only reliable source for light honey. Last year the colonies which were strong enough for boxes at the beginning of raspberry-bloom commenced on every box, but the bloom ended when only a few were capped. The others remained in that unfinished condition from week to week, although the fields and roadsides were white with clover-bloom. I have now taken off all the light honey we expect to have, 214 lbs., about half comb and half extracted, from eight colonies. This is all amber colored, and I think it is mostly from raspberries, though there has been some clover honey this season.

The Turner does not do with us as described on p. 530 of GLEANINGS, but it is one of the earliest, and is good. The Philadelphia yields much better, and I

think it furnishes more honey. The Cuthbert is later, and very good, but it does not yield very well with us. One of the first and best for honey is the Purple Cane, but it is not good for market. The bees work on the black as well as on the red.

I can not agree with Mrs. Chaddock. I wish to have religion the chief business of my life. I leave my bees to swarm naturally through the week if they will. If I think any of them likely to swarm on Sunday I swarm them artificially on Saturday, or take the risk of losing them. If you do not wish to have them swarm at all, give them plenty of room.

MISS L. WILLIAMS, 9-11.

Delavan, Wis., Aug. 5, 1885.

Thank you, my friend, for your report in regard to the different kinds of raspberries. If we could get at the kind of raspberries most profitable for bee-keepers in different localities, and during average seasons, it would be quite a valuable fact.

THE NEW JOHNSTON PUMP: HOW LONG DOES IT TAKE TO EMPTY A PAIL?

October GLEANINGS, page 667, that Johnston pump. About what is its time in using up a pail of water? The continuous stream is a great improvement, I think. I should like one or two before swarming-time again. I have no report to make. I had 10 hives last spring; obtained 100 lbs. of honey—about 300 of it comb honey; increased to 46 hives. In this community we have no basswood, no white clover, no buckwheat. Honey this season from the middle of August to the 26th of Sept., mostly from smartweed and asters.

El Dorado, Kan., Oct. 12, 1885. R. W. PERKINS.

The Johnston pump, as sent out by the manufacturers, will empty an ordinary pail of water in two minutes, and will send a constant stream 50 ft. and over. If, however, the orifice is reamed out with an awl so that the opening is a little larger than $\frac{1}{4}$ in., you can empty a pail in about a minute, at the same time forcing the stream just as far as before. In this case, however, the stream will not be as constant as when the orifice is smaller. We will send out the pumps unchanged, and the purchaser can easily make the orifice to suit himself.

THAT CRYSTALLIZED HONEY-DEW.

The following should have been used some little time ago. It is in regard to the crystallized honey-dew mentioned on page 586. We sent it to Prof. Devol, with directions to forward to Prof. Cook, after he had examined it. Friend Cook's reply appeared on page 626.

I did not stop to make a microscopical examination of the "crystallized honey-dew" on those plants, but mailed them immediately to Prof. Cook. I think the amount of honey-dew present on those specimens something remarkable—much more than I had ever before seen. It hardly seems possible that it could be produced in such quantities; but it is there; and how else is its presence to be accounted for, if not from the insects?

Columbus, Ohio, Aug. 27, 1885. W. S. DEVOL.

GRAPE SUGAR FOR WINTER STORES.

A few years ago you recommended grape sugar as a good article to feed early in the spring, to stimulate bees to breeding. I tried it, and found it to be the very thing. I should be much obliged if

you would let me know if it would do well to feed now for wintering bees on. We have had such a drought that my bees have nothing to live over winter on, and I should like to feed grape sugar if it will answer the purpose. Please let me know, and also if you have the grape sugar for sale, and at what price.

My bees might have half enough honey to winter on. If I were to feed half as much as they would want of grape sugar, would they use the grape sugar first, as it was gathered last, or not? If they would use it first, it would not get hard before they would use it, and would answer their purpose. Did you ever feed it for winter stores?

G. W. ROSENBERGER.

New Market, Va., Oct. 1, 1885.

Friend R., although grape sugar has been used for wintering, and sometimes successfully, I would not advise using it at all at this season of the year. We have not sold it for several years, even for spring feeding, because the low price of cane sugar would make it no object. The bees might use the grape sugar first, although they greatly prefer good honey when they can get it, as you may have noticed. But even if they would take it first, I think I should prefer to invest the same amount of money in coffee A sugar, which can now be had by the barrel for only 7 cents per lb. Grape sugar always hardens in the cells in cold weather, which is the principal objection we have found to a good article. I am sorry to say that some of the factories that started up a few years ago turned out an article so poor that it was unfit for bees or for any other purpose. This latter reason, in connection with the recent low prices of cane sugar, is probably why it has been almost of not entirely discarded for feeding bees.

SUNFLOWERS: A REPORT OF.

I got a nice lot of sunflowers from the seed you sent me, but the bees did not work very much on them; but the seed will pay me for my trouble. As to the spider and Simpson honey-plants, I never got any of them to come up.

JOHN MOTE.

Jenkins, Ala., Sept. 18, 1885.

Friend M., it is a little remarkable that bees sometimes work on sunflowers, and again they do not. I do not know whether it is because it is only occasionally there is honey in the blossoms, or whether the bees never work on sunflowers at all, unless they are obliged to.—In regard to the seeds of the spider and Simpson plants, I think you will get the seeds to germinate every time, if you follow the directions given in our price list. For next season's use we shall have these directions very plainly printed on the wrapper. We mail you a package of each, free of charge.

WILL IT DO TO USE STORES FOR WINTER, SAVED OVER FROM BEES THAT DIED THE WINTER BEFORE?

Last fall I had 6 swarms of bees. I fed them sugar syrup till they were well filled, and then put them in the cellar. Three of them were dead in the spring, and the rest died of spring dwindling. There is a lot of the stores left. What shall I do with it? Will it do to feed bees yet when they can fly, or not? Would it be wise to melt the combs all up and make wax? The hives are in the barn, with the frames in them. I have not seen them since the fore part of

the summer. The mice will be apt to trouble them through the winter.

Mrs. F. L. Church.

Mitchell, Mich., Sept. 30, 1885.

My friend, if the stores are principally sugar syrup which you fed, I should feel quite sure it would be just as good for next winter as any you can use, providing the bees sealed up the sugar at the time it was fed to them. If there are unsealed stores in the combs, or any thing that is thin and watery, I would throw it out with the extractor. I would give the combs to the bees as soon as possible; and if I could I would put one comb at a time in the center of a strong colony, to let them sweeten and repair up before winter. I should never think of melting up good combs, especially where they contain stores.

GIVING BEES FOR WINTER STORES, HONEY THAT HAS BEEN SCORCHED.

We have several pounds of honey, obtained in rendering cappings into wax, which was scorched until it looks, tastes, and smells much like dark molasses. Would this be wholesome for winter stores, either alone, or used with syrup, as in making the Doolittle bee-feed? CORNELIA B. KILBOURNE.

Clinton, Oneida Co., N. Y., Oct. 7, 1885.

My friend, I would not give it to the bees this fall. Save it until they can fly next spring, and it will do no harm. We think you must have been a little careless in getting it scorched, for we usually get the very nicest quality of extracted honey from cappings. It might do to mix with syrup in making the Doolittle bee-feed, but I should be pretty careful about taking any slight risk in regard to the quality of the winter stores.

SAMPLES OF HONEY FOR OUR APPROVAL.

I send you to-day two 7-lb. pails of honey. The pail not candied was thrown out yesterday. There is a little basswood in it, but I do not know what the rest of it is. You can give me credit, in proportion as it compares with that of Heddon's. Honey is not as good in quality this year as we have had, but it is better than last. There may be some specks of comb in the honey, as I never use a strainer, for the reason that it will not run through the thinnest cloth unless you heat it hot. I have some five or six thousand pounds like the sample sent.

Springboro, Pa., Sept. 24, 1885. CHAS. OLIVER.

Friend O., the two pails came to hand in perfect order, and the honey is nearly if not quite equal to any we have ever had. It is remarkably thick, and nicely ripened, and should command a good price in any market. These pails make a neat and handy package indeed; and if the railroad men could be induced to handle the box without tipping it over, the honey is so thick it seems to me as if it might be shipped safely, without any sealing up.

BLACK WORKERS FROM IMPORTED QUEENS.

Why is it that imported queens' daughters sometimes produce some black workers with no perceptible yellow bands, while the improved Italian tested queens' daughters never do? at least, they never have for me. I have raised about a hundred queens this season, and a few of the daughters of my imported queen produced some workers with no bands. I commenced four years ago with six hives; have now 84 strong colonies, and 15 three-frame nuclei of

nice Italians, and \$200 ahead for my trouble and expense. How do you think that will do for Blasted Hopes? I do not count on losing one this winter. I expect to winter my nuclei where they stand now, and perhaps I shall have queens to replace any that may die in my strong hives during the winter.

W. A. SANDERS.

Oak Bower, Hart Co., Ga., Oct. 5, 1885.

Friend S., I do not know that we have ever seen bees all black, right from the daughter of any of our imported queens, although we do have bees with yellow of such a dark leather shade that the bands can hardly be recognized unless the bee were to be filled with honey, and placed on a window as per A B C. There is this about the yellow bands, however: By breeding for bands for several generations, this feature becomes so prominent that a first cross with common bees will pass very well for full bloods, so far as the marking is concerned. Imported stock from Italy has not, of course, been bred for color or for bands, as we breed them here.—I do not see how you can consistently have a place in Blasted Hopes, friend S.

BURYING BEES FOR WINTER.

How will this do? On dry sandy land we excavate, say a foot deep, lay timbers so the bottom of hives will be 4 or 6 inches from the ground; set stakes at sides of ends, and board up a space, sides and top, of 6 or 8 inches; bank up sides and ends with earth; cover over with oat straw. We have about 15 hives for wintering.

J. B. WHITAKER.

Hopkinton, Iowa, Sept. 29, 1885.

Friend W., this subject has been pretty well discussed in our back numbers. With such winters as you have in Iowa, no doubt it will sometimes answer a good purpose; but as a rule I am not much in favor of burying bees. The articles of W. Z. Hutchinson, for several years back, have discussed this matter of burying bees, in all its bearings. May be he can answer your question better than I can.

LETTING THE SNOW DRIFT OVER THE HIVES IN WINTER.

I find nothing in the A B C as to the elevation of the hive in wintering. If you allow the hive to remain on the summer stands, the first deep snow would smother them, closing up the entrance. Have you a device to admit the air, or what is your plan? I have prepared my bees according to your instructions, in a Simplicity hive I got from you last spring, leaving the hive extending over the bottom-board about 1½ inch, and it is only about 6 inches from the level of the ground.

H. R. STEINBUCK.

Eagleville, Pa., Oct. 5, 1885.

Friend S., I think you are decidedly mistaken in saying that the snow would smother the bees. I have not been able to discover that the bees ever smother by being covered up with snow; in fact, I should rather have them covered with snow than to be prepared in any other way that I know of, providing the snow falls itself, or is drifted on to the hive by the wind. Your Simplicity hive is all right as it is, if you are going to risk wintering in such a hive; but you will notice, by our price list and A B C book, we do not recommend these hives for winter purposes.

FATTENING-BOATS OR TANKS, FOR CARP.

Occasional inquiries come to hand from the readers of the A B C of Carp Culture. Lately, several of these inquiries are concerning the illustration on page 69 of that work. I can now see that further details are necessary. I find it impossible to get ready-made screen material for the bottom of the tank or boat, which is of sufficiently fine mesh, that is not at the same time of too light wire. I have persuaded one of the oldest manufacturers here to make up a small lot, of extra-heavy wire. I also find that the mesh of the wire netting on top of the boat had better not be larger than $1\frac{1}{2}$ or even $1\frac{3}{4}$ inch, because the carp dislike close confinement; and if the mesh is from 2 to 3 inches they are liable to force their noses through, even until they "gill" themselves. A mesh of $1\frac{1}{4}$ inches is sufficiently large to pass the food through. I find the ready-made netting is also of too light wire, and have also made arrangements to have some made of heavier wire. This material will be heavily galvanized. It will at present cost here, for the top, \$1.75 per square yard; and for the bottom, \$2.50 per square yard. It will be made 36 inches wide. It is just as well, if not better, to make the ends of these tanks square. I have for many years used exclusively, for fastening screens, the carpet staples illustrated on page 698 of GLEANINGS.

The fall drainings of the leading carp-cultural establishments in this region (and owned by members of the American Carp-Cultural Association elsewhere), are mostly finished, and the most satisfactory results are reported wherever the improved plans are in use, while failures are generally reported with chance-made ponds. We have had several notable carp dinners in this region, and every participant pronounces the carp a first-class food fish. Most of the carp in this region are of the parti-scale types, and a large percentage are nearly scaleless.

Every carp culturist in the country should join the American Carp-Cultural Association. It costs but one dollar. I will cheerfully send constitution and by-laws to any address. MILTON P. PEIRCE.

Philadelphia, Pa., Oct. 20, 1885.

Thanks, friend P. Our wire-cloth factory have furnished us steel wire cloth as fine as 8 meshes to the inch, and heavily galvanized, and it seems to me it is strong enough to hold a horse. Prices are given on another page. We mail you a sample, to let you see if it will not be the thing for the bottom of the fattening-boats. I also send you a dollar, that I may become a member of the American Carp-Cultural Association.

BEES AND CIDER-MILLS.

I believe those who would petition legislation in regard to cider-mills, as per your editorial, are just as ignorant of other people's industries as others are of bee culture; for the bees are just as much a nuisance to the cider-maker as the cider-mills are to the bees. When both parties have a proper understanding of the matter, it can be fixed at little expense, so the cider-maker is not bothered with bees, and the bees are not hurt by the cider. A press generally has a roof, and a little more expense will put wire cloth over a part, or mosquito-bar, if not boards, and it will pay, besides keeping bees out. The doors want good strong springs to them and they should be so fixed that they can not be propped open. We have a press only a few rods

from the apiary, and we kept the bees out by having only the main places closed; but this fall we were compelled to close every hole, for they found almost every one they could get through.

THE LINDEN FOR HIGHWAY PLANTING.

While so many varieties of trees are lauded for highway planting, the basswood receives scarcely a good word. One defect, and the only one I know of, is that it is late in emitting its foliage, which I think is counterbalanced by that sweet perfume and merry hum later on. Bee-keepers would do a grand thing by furnishing the trees free to the farmers who plant them. The old fences can be taken away, the ground planted to potatoes, and then basswood planted instead of every post. Soon the wires can be attached to the trees, if a fence is desired, and some locust can be mixed in, as they make splendid posts. There should be some trees near any apiary, for they come when most needed. Here let me speak a good word for the ground-ivy, or gill-over-the-ground. I think the honey is splendid, and I judge it is good for medical purposes.

Marshallville, O.

C. WECKESSER.

CAN A CORN-HOUSE BE CONVERTED INTO A SUITABLE WINTERING HOUSE?

Last spring I bought three colonies in chaff hives. I have now ten, all told. To winter the same I thought of covering my frame corn-house, 12x16 ft., with matched pine to make it dry and warm as any out-building. I have asked other bee-men about it, and they say a building to keep bees in must be frost-proof. What say you?

Plymouth, Mich.

O. ARCHER.

Friend A., a corn-house would not be suitable, without very much expense being laid out upon it, for a wintering-house. Houses of this kind are usually made either close to the ground or partly under the ground; or, what is better, is a cellar under a building, so as to get protection from the frost. Are you really sure that a wintering-house is needed in your locality? I certainly would not go to the expense of building one, unless extensive bee-keepers in your vicinity have found them an object. I believe that cellars are, as a general thing, cheaper and better.

HOW TO PUT THE HILL DEVICE OVER THE COMBS.

I take this method of asking which way you place the Hill device over the frames of a Langstroth hive. I looked at the device you sent me, and was not sure which way they ought to be put on the frames of comb—the back-bone (hoop iron) across the frames of comb, or lengthwise of the comb. If I put it lengthwise of the comb, the space under the burlap does not extend near the sides of the hive. When full with ten combs, the burlap fitting close might prevent the bees from getting to the outer combs. If I set the back-bone across the combs, the burlap does not fit so well at the ends of the hoop iron, or back-bone. The space under the device is only across the combs, and not as long lengthwise of the combs as it would be to set it the other way. Which way should the back-bone of the device be set—across the combs, or lengthwise of the combs?

JOHN M. LEWIS.

Crothersville, Jackson Co., Ind., Oct. 12, 1885.

Friend L., the device is placed over the combs so that the piece of strap iron runs parallel with the brood-frames; that is, when it is intended to be used with the Simplicity

hive; but with the Gallup frame, or Adair, it might be best to turn it the other way. In any case, the device should always be placed exactly over the center of the brood-nest; and the cushions or chaff should come down close all around.

HOW TO PREVENT WEEDS GROWING AT THE ENTRANCE.

Your piece in regard to weeds in the apiary reminded me that perhaps the way I manage my yard may be interesting to some of your readers. It is considerable work on the start; but as it is very lasting, I think it pays. I dig out a space $3\frac{1}{2}$ feet square, and six or eight inches deep, and fill with coal cinders, pounding them down as solid as possible. No grass or weeds ever find their way through. Making the holes $3\frac{1}{2}$ feet square, leaves room enough around the hive for the lawn-mower to work without touching it. A yard kept in this way presents a very tidy appearance. I find very few yards among our bee-keepers but are rather slovenly looking, and I think a little stirring up of this matter, with a few directions how to fix up a little, will have a tendency toward a great improvement. I believe keeping one's yard nice and tidy helps to sell its products; consequently I look at it as a paying investment, and, like yourself, I can not tolerate the stone on the hive nor the rough casing around it. If the business won't pay the expense of planing and paint, I for one will abandon it and try something that will.

M. H. HUNT.

Jell Branch, Mich., Oct. 21, 1885.

I would say to our readers, that friend Hunt is a man who is very particular about the tidy appearance of his apiary. I have visited both his bee-yards, and can speak from actual observation. We have used cinders around our hives in the way Mr. H. suggests; but in our experience, weeds and grasses will, after a while, creep over from the sides, if not through the cinders. For this reason, and the expense, we prefer using salt, and then have white sand in front of the entrance. I like to watch the yellow-banded Italians sporting on a light background. Of course, the sand can be put over the cinders, if desired.

ERNEST R. ROOT.

SALT AROUND THE ENTRANCES, ETC.

GLEANINGS for Oct. 15 is at hand on time. I was glad to see that note of Ernest's in regard to killing weeds with salt. I have used it with success for two years. It is the only thing I can find to kill coco grass. If any of the friends are bothered with that grass, one or two applications will clean it up.

I send in my first report. This is my second year in apiculture. I have invested to the tune of \$125.00. I started last spring with 6, increased to 21. I have taken only 125 lbs. of comb honey in 1-lb. sections. But every one of the 21 has ten frames of brood and honey, to carry them over the winter.

While I can not write and tell you that I have ceased to use tobacco, I can say that I have five brothers, and none of us ever used it or whisky either. I hope to send you a better report next year than this.

C. E. JENKINS.

Bryan, Texas, Oct. 19, 1885.

OBTAINING NAMES AND ADDRESSES FROM THE PAGES OF GLEANINGS.

When reading GLEANINGS I sometimes feel like sending a circular to some of the friends, but do not feel like doing so without your permission; and the fact is, I did send some before it ever occurred to

me that "I have no earthly right to use them," because you paid for getting them, and not I. I beg pardon for having done so, and am willing to pay you what you think right, in strawberry-plants next spring. As you request the reports from those who have used the reversing devices, I should say I am well pleased with them. They do not cut the fingers as the metal corners do, and are just as good in every way, and better in several ways, aside from their reversing advantages.

You advise "full frames of honey" for winter stores. I always think they winter better when only three-fourths full. When full it acts too much like a cake of ice, or a board. The cluster on each side is too much for itself.

C. WICKESSER.

Marshallville, Ohio, Oct. 12, 1885.

Why, friend W., you surprise me. Gather up the names in GLEANINGS for the addresses of persons to whom to send price lists, by all means. In fact, that is just what I want the bee-friends to do, that we may get still better acquainted. One reason why I insist on having every name with the full postoffice address is because I want you to send circulars in this way. It is true, that names thus obtained may be used for the purpose of sending swindling advertisements and circulars; but to counteract this objection to giving names in full, we are going to try to keep our readers posted in regard to all fraudulent circulars they may receive.

WINTERING IN A CAVE: QUESTIONS CONCERNING.

Will you please answer, through GLEANINGS, a few questions? On account of the winter being so very severe upon the bees, I concluded to winter them this coming winter in a cave, so I have commenced, and it is about half dug. Yesterday I took hold of your A B C, and found, under the head of "Wintering," that you "would not try indoor wintering with less than 40 or 50 stands." I have 21 stands of bees. I thought to place 12 of them in the cave. Now the question arises in my mind, Are you still of the same opinion? and if the cave is frost-proof, why won't it do with few stands, as well as with many? The cave being in the earth, of course it will be a little damp, if the hives are kept from coming in close contact with the damp, either on side or floor or ground. I will have a good drain, sufficiently large to ventilate the cave, and it will run some forty or more feet under ground. Do you think it will be sufficiently dry? I will have the bottom of it so dug that it will thoroughly drain itself. It is dug 8×10 ft., $5\frac{1}{2}$ ft. to $6\frac{1}{2}$ ft. deep. It will have two doors. It will oblige me if you will please tell me a little in regard to wintering in a cave. I will have a boxing, or a pipe like a chimney, so a current of air can pass through.

There may be quite a number who would like it if you would give us a little instruction in this direction. Again, if burying bees is a good plan, how is it that they won't do in a cave, if properly ventilated?

The honey season is good so far, and the present rains promise full honey unless we get too much. No honey-dew. Those that wintered in cellars and caves were the only ones who brought their bees out without heavy loss, and in many instances they died right out without a bee left.

Cleveland, Iowa.

EVAN B. MORGAN.

The cave as you describe it, friend M., will

answer excellently, especially if you manage to shut out every particle of light: and there is this in your favor—such caves have been successful in very many localities. If your cave is absolutely frost-proof, very likely ten or twelve colonies will do as well as a larger number. Your cave needs to be proof against warm spells that may come in winter, as well as against extremely cold spells: that is, the temperature should never go down to freezing nor up as high as 60°. Some claim, you know, that the temperature ought not to go as high as 50°.

THAT NAMELESS BEE-DISEASE! DOES REMOVING THE QUEEN EFFECT A CURE?

Your foot-notes to C. K. Decker, p. 677, Oct. 1, on "That Bee-Disease," carries the idea that the trouble is in the queen; but in one instance I find it is not so. I had, last summer, a stand dying about as Ernest and Mr. Decker and some others have described. August 13th the queen went out with a swarm. She was hived on empty combs, and no more of them died. A vigorous young laying queen was introduced in the parent hive, but bees from it kept dying for some weeks, until after I took some of the outside combs of honey out, putting empty ones in center of the hive, then all got well soon. Is it not possible that they had some bad honey, which may have caused the dying in my case?

I hope to have one or two hives affected in the same way next year, so that I may learn the cause.

R. W. PERKINS.

El Dorado, Butler Co., Kan., Oct. 12, 1885.

Friend P., I think it very likely that unwholesome stores are frequently the cause of this malady, or something quite similar to it. In that case, of course, putting in a new queen would not help the matter; but it would probably correct itself if the bees survive long enough to consume all the unwholesome stores.

ANOTHER SWARM EXTRACTOR: HOW TO CONSTRUCT.

I sent to you and got a wax extractor. It operated as well as it was represented to do, but still it did not answer the demand. Every day pieces of comb would turn up; they would be put in a barrel, until enough would accumulate to make it worth while to extract; by that time it would be full of moths. This was vexatious. I saw something in GLEANINGS that set me to work. In two hours I had a box completed that is worth more than any thing that I have seen or heard of.

I made a box 30 in. long, 14 in. wide, 14 in. deep, with a $\frac{1}{2}$ in.-square slat across each end, half the distance between bottom and top. On these I laid a $\frac{1}{2}$ in. board, 9 in. wide, $\frac{1}{2}$ in. thick; then a piece of tin 16×30 inches; I bent it up on two sides and one end. I filled this with comb, set it in the box on the middle board. All around the box, on the outside, projecting above the box $\frac{1}{2}$ in., I nail strips $\frac{3}{4}$ ×2 in.; then a lid 2 in. wider and longer than the box, hinged to the top strips, so as to shut over the box in time of rain. I put a piece of bright tin on the under side of the lid, so that when open to the right place the reflection will be on the glass. On the bottom of the box, under side, I nail a block 3×4 in., 5 in. long; bore a 2-inch hole through it, set a strong stake in the ground, perpendicularly to the summer sun; taper the tenant to one inch on top, set the box on the tenant so it will tip. On the top of the

box, in the rabbet made by the strips around the outside of the box, I laid 3 lights of 10×14 glass, and my machine is complete, and large enough for a 500-swarm apiary.

I should like to ask lots of questions, but you, may be, have answered them before. We read GLEANINGS, and now we must remain in ignorance; but still there are several things we should like to know, if you would answer; but we might not understand it, any more than we did Prof. Cook's big talk about honey-dew.

B. L. BRIER.

Jamestown, Tenn., Sept. 30, 1885.

Friend B., your sheet of tin is certainly an ingenious adjunct to a simple sheet of glass, and I should think it would answer nicely. Ask all the questions you wish, by all means, and we will try to make the answers plain. I thought Prof. Cook made the matter very plain about the honey-dew. Suppose you write directly to him in regard to what is not clear, and we will have your question and his reply given in GLEANINGS. Some of the veterans sometimes think we take an unnecessary amount of space in trying to make things plain to beginners.

FROM 33 TO 47, AND 100 LBS. OF HONEY.

I have been a close reader of GLEANINGS for several years, and as I read and ponder over the many trials, difficulties, and disappointments incident to apiculture, I oftentimes feel constrained to make mention of my ups and downs in bee-keeping. But, alas! when I attempt the task I find myself incapable of even getting together my own crude thoughts on apiculture, which I am sometimes tempted to ask space for in your journal. Soon I hope to not only see some of my views on Southern bee culture but a full description of our Wills Valley, in North Alabama, in GLEANINGS. I should say there is no other better location, naturally adapted to bee culture, in the whole State of Alabama, situated as we are between the two Lookout and Sand Mountains, in a rich fertile valley traversed by many water-courses. We have the greatest imaginable variety of honey-producing trees and flowers. From the early blooming of the maple to the late asters in the fall, we are scarcely without something from which the bee can secure nectar. Our bees now, Oct. 12, are busy on the white asters. Our yield for this season is, comb and extracted, each, 500 lbs., making 1000 lbs. in all. We had in the spring 33 colonies; increased to 47, which are now in fair condition for winter. We have Italians and hybrids. We winter on summer stands in Root Simplicities, with but little loss. This has been a very unfavorable year here for surplus.

C.—J. B. MARSH, 33, 47.

Collinsville, Ala.

CROSS BEES.

I have just commenced with bees, having purchased 29 full colonies. Before I could get the bees home they made a start with me, and for two weeks I had to go armed with a protector, gloves, and smoke; and for all the smoke, if I touched a hive they would boil out in front by hundreds, and fill my clothes full. I thought I was in for it, and that patent hives and all the Yankee inventions had failed to civilize this young heathen. There was no backing down. I had got the bees, and, worst of all, they often "got" me. I persevered gently with

these little friends, fed the weaker swarms, and soon they regarded me as a fast friend, and I often open the hives without gloves, protector, or smoker.

Rockport, O., Sept. 18, 1885. G. A. FARRAND.

ALSIKE CLOVER: ITS VALUE AS A HONEY-PLANT.

Prof. A. J. Cook, Lansing:—Will you not kindly say how many colonies and acres of alsike your brother had (see p. 697, Oct. 15)? also whether the alsike bloomed during white-clover bloom or later.

Terre Haute, Ind., Oct. 18, 1885. T. H. KLOER.

Prof. Cook replies:

I will say that my brother had about 80 colonies of bees, and nine acres of alsike clover. At the time mentioned, our white clover here at the college was in full bloom. My brother, however, cut his alsike early, to delay the time of blooming. While I much doubt if alsike clover is equal to the common red clover as a farm crop, I do think that for bees it is just admirable. It can be made to come late in the white-clover harvest, and just before the linden.

A. J. COOK.

Agricultural College, Mich., Oct. 22, 1885.

REPORTS ENCOURAGING.

FROM 71 TO 80, AND 3524 LBS. OF HONEY.

HERE is my report for the past season of 1885, in the apiary of A. M. Matthews, Pope Co., Ark. Out of 71 colonies in the middle of March, 18 were in Viallon Simplicity hives, 13 of which were queenless. The queens were lost in extracting the previous fall; 16 colonies were in box hives, with a Simplicity on top for surplus, and 37 in box hives, so I had to transfer 53 outdoors, late each evening. I increased by natural swarms to 80; and after doubling in the fall they counted 76. I took 3524 lbs. of honey—3136 extracted, and 388 lbs. comb. Our partnership has succeeded first rate, on account of both of us trying to do right, which the future will prove better.

Pittsburg, Texas, Oct. 19, 1885. C. J. DORFMAN.

I have had good success with my bees this year, and have sold a "right smart" of honey.

Jackson, Tenn., Aug. 24, 1885. G. B. CARTMELL.

I have taken, this season, from 16 hives, actual count, 748 lbs of honey, about one-third comb. I will report fully later.

Gonzales, Tex., Sept. 28, 1885. M. BROER.

FROM 15 TO 145, AND 130 LBS. PER COLONY.

Began with 75 colonies; increased to 145, and have extracted about 130 lbs. per colony so far, with the fall honey-flow yet to come. We have had a very wet season.

Hahnville, La., Sept. 8, 1885. C. M. HIGGINS.

FROM 28 TO 44, AND 2200 LBS. OF HONEY.

This is my first year in handling bees, although I have studied bee culture for three years. I started in June with 28 colonies. I have gathered 2200 lbs. of honey, and have now on hand 44 colonies, all in good wintering condition. I think I shall be able to rob at least ten of my colonies again. I have sold here about 100 lbs. of honey, and have on hand 1200 lbs. of extracted honey. Can you tell me a good market to sell?

Forsyth, Ga., Sept. 2, 1885.

R. P. BROOKS.

Honey Column tells all we know, friend B,

FROM 31 TO 50, AND 1000 LBS. OF HONEY.

Here is my report. As I am only an A B C scholar you must not expect too much of me. I bought 30 colonies last fall, and wintered in all kinds of boxes. They came out this spring with 16. I transferred all into the Triumph hive. I make my own hives now. I have increased to 50, and have taken 1000 lbs. of honey in one and two pound sections.

Dunkirk, O., Oct. 3, 1885.

W. A. MARTIN.

REPORT OF ONE SWARM OF BEES IN THE HANDS OF A BEGINNER.

My bees appear to be in excellent condition. From the colony I bought of you in May I had a swarm July 5th. This swarm made about 60 lbs. of honey in 30 days, and have been working in the second story for nearly a month. The original colony swarmed again about July 20th, a small swarm, but good workers. I also hived a swarm of black bees, which alighted near my place. I have given them away, because I did not know what the result would be to work black and Italian bees together. My experience has been very pleasant and interesting so far.

E. J. WHITEHEAD.

Southington, Conn., Sept. 3, 1885.

AN ENCOURAGING REPORT FROM TEXAS.

The basswood, our main dependence for nice honey, was so near a complete failure that I shall have but little honey to put on the market this season. My bees, however, are in excellent condition, and are working with a rush and will. I think they will gather an abundance of stores for fall and winter supplies. I have a fine lot of young queens from the last imported mother received of you, and they are turning out beautifully marked Italian bees. I am highly pleased with them.

Palestine, Tex., Sept. 8, 1885.

C. BRYANT.

FROM 9 TO 19, AND 600 LBS. OF HONEY.

As the time of year for reports has come again, I will send in mine. I opened the spring with 9 colonies, in moderate order; increased to 19 by natural swarms, except two I divided, and obtained 600 lbs. of choice comb honey, mostly in 1-lb. sections. My best yielded 100 lbs., and second best 90. I will give the record of one colony. About the tenth of May, No. 1 swarmed; and as I had old combs, the swarm had nothing to do but gather and clean up. In about three weeks I divided swarm No. 2, making No. 3; then in about two weeks No. 2 swarmed, and one week later No. 2 swarmed again, both of which have gathered plenty to winter on, and No. 2 gave 44 lbs. choice comb honey; and its mother, No. 1, 90 lbs. of surplus. Is not that good for a home-bred Italian queen, and not an acre of clover of any kind within range? All they had to work on was wild flowers, heart's-ease, and Spanish needles.

5—S. C. FREDERICK, 9—19.

Corl Vale, Kan., Oct. 4, 1885.

541 LBS. OF HONEY FROM ONE COLONY.

As I have just finished up taking honey, I will let you know, for the first time, how I am getting along with my bees. I have 30 hives of bees in good shape for winter, and have taken 1967 lbs. of honey from them, and they have plenty to winter on. My best hive has made me 541 lbs. of extracted honey. Of course, they did not all do that, or I should have to dig a pool to put it in. They have averaged 65 lbs., counting the capital hive. Now for the Clark smokers. Some are bothered with them by choking up,

and I was too; but gumming up three or four taught me how to manage it. Burn sound chips instead of rotten stuff or rags; and when it takes the quinsy, blow it until it gets very hot, then point it to the ground and blow as hard as you can. A few puffs will start its lungs to action, and the trouble is over.

A. L. LIGHT.

Pastoria, Ark., Sept. 6, 1885.

Well done, friend L. The above report not only speaks well for you, but well for your State of Arkansas. Was the large amount of honey made entirely by one colony, or from the colony and its increase?

FROM 64 TO 100, 7200 LBS. OF HONEY, AND 75 LBS. OF BEESWAX.

Commenced the swarming season with 64 colonies. Increased to 100. Comb honey, 5500 lbs.; extracted, 1700 lbs. Total, 7200. Beeswax, 75 lbs.

Silverton, Oregon, Oct. 3, 1885. E. S. BROOKS.

NOTES AND QUERIES.

A GREAT FALLING OFF IN THE PRODUCTION OF HONEY IN CALIFORNIA.

VENTURA County will not ship over one hundred tons of honey this season, as but few apiaries have more than enough for home consumption; whereas last year the estimated shipments were two thousand tons. Bees are cheap; this is a good time for eastern bee-men with poor health to start in the bee-business in one of the healthiest counties in the State.

Santa Paula, California. L. M. HADRISEN.

BEES AND RASPBERRIES.

Bees do work on black cap raspberries, but not so much as on the red.

MAHALA B. CHADDOCK.

Vermont, Ill., Aug., 1885.

A GOOD REPORT FROM ALLEY'S TRAPS.

I used $\frac{1}{2}$ doz. of Alley's queen-traps last year; no more swarms leave for the woods when I am away from home.

W. E. FLOWER.

Ashbourne, Pa.

ANOTHER SWARM GOES OFF WITHOUT ALIGHTING.

We had two swarms this year, but the first flew away without alighting.

A GOOD REPORT OF THE POULTRY NETTING.

That wire for the chicken yard is just the thing. It gives them a large space, and we have had only three or four fly over, and after we clipped them no more have tried it.

GEO. F. CLEVELAND.

Collamer, O., Aug. 26, 1885.

WILL EARLY-AMBER MOLASSES DO TO FEED?

I see by your catalogue that Early-amber sugar will do to feed bees. What do you think about Early-amber molasses? Would it do to feed for brood-rearing? Would not the sugar reduced to syrup be the same as molasses? A neighbor of ours saved a swarm last spring that was destitute, by pouring about a quart of Early-amber molasses in among the bees and combs.

MRS. H. BABSON.

Lower Salem, O., Oct. 3, 1885.

[Mrs. B., the Early-amber molasses, or, in fact, any other kind that the bees will use, will answer for spring feeding; but so far as my experience goes, all these low-priced syrups are not sufficiently free from foreign matter to be suitable for winter stores. Better save your Early-amber syrup till spring, and use only pure white sugar for winter stores.]

ANOTHER NUCLEUS THAT PERSISTS IN KILLING QUEENS.

It has not been a good summer so far. I have lots of trouble with a nucleus colony. They are determined to have no queen. They have killed four Italian queens, and two of them after the queens had commenced laying. The queens cost me \$1.00 each.

J. W. PORTER.

Ponca, Neb., July 21, 1885.

[The only remedy I know for such cases is to put a good lot of brood-combs into the hive, so that the young hatching bees may outnumber the stubborn and ill-tempered old bees.]

HOW TO PLACE FEED OVER THE CLUSTER.

I wish you would tell me how I can place the feed that you recommend on pages 13 and 14 of your catalogue—the feed which is made of powdered sugar and good honey, and is placed over the cluster—without letting the bees fly out while I am doing it.

N. LUMAN GERRISH.

Nottingham Center, N. H., Oct. 8, 1885.

[Friend G., it is a pretty hard matter to feed bees, any way you can fix it, without causing them to fly out. If the weather is warm, so they can all get back again, it does no harm to let them fly out, that I know of. During cold weather, if you remove the cushion quickly and turn back the burlap, you can usually get a ball of the candy right over the cluster, and get the hive closed up before the queen takes wing.]

HONEY-ANTS.

I got some honey-ants this morning. They build a nest in the ground, and have a room. There are three different kinds—the queens, workers, and one other kind. Their bodies are full of honey. When one of the workers wants some honey it caresses the feelers of one of these, and she feeds him in the same manner as a bee. Don't you think you could get Prof. Cook to tell us some of their habits, and let us know in GLEANINGS?

W. B. KENDALL.

Uvalde, Texas.

[Friend K., Prof. Cook has already told us about these ants. I think you will find some mention of them in his Manual, and I think he wrote an article in some of our journals, though I can not say just now where you will find it. Will friend Cook please tell us where such a paper is to be found, if he did write one?]

HOW FAR DO BEES FLY, AND WORK PROFITABLY?

How far can bees go for honey, and make it profitable? Can they make it profitable with pasturage two miles off?

C. W. HARDY.

Burnet, Burnet Co., Texas.

[Friend H., this matter has been discussed at considerable length in our back volumes. Bees ordinarily do not go more than two or three miles for stores, if I am correct; but under some circumstances they have been known to fly six or seven miles, and accumulate honey, even then. These great flights are usually across a body of water, or over a prairie, under circumstances where neither timber nor hills inconvenience them.]

THE STANLEY AUTOMATIC EXTRACTOR.

We see in Aug. 1st No. a call for reports of Stanley's automatic extractor. We have used one this season, and must say it is the best now on the market. We have extracted over 2000 lbs., and in one-half the time it takes with other makes. We would no more think of using an extractor not reversing the combs automatically, than of using a cradle in the place of a self-binding reaper.

Geddes, N. Y.

F. A. & H. O. SALISBURY.

We had a very severe drought in spring and summer, after a dry and cold winter. The white clover was an entire failure. I saw only one swarm of

bees from 43 old stands, so our honey crop is a failure. I am not able to buy any new hives this season. I endeavor to make them pay their own expenses.

L. C. MAJOR.

Brandy Station, Va., Oct. 10, 1885.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,
EDITOR AND PUBLISHER.
MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, NOV. 1, 1885.

For God sendeth his rain on the just and on the unjust
MAT. 5: 45

THE KANSAS BEE-KEEPER.

In answer to several inquiries, we are obliged to state that the above paper is no longer published. As to whether they have made arrangements with their subscribers for the unexpired time, we are unable to say; but from what we know of the proprietors, we should suppose that, of course, they have. There is nothing wrong in withdrawing from a business speculation, whenever it becomes unprofitable, providing you make good all your unfinished contracts with your fellow-men; and I believe the bee-papers that have suspended during the years that are past have always made it a rule to do this.

WIRE CLOTH MADE OF STEEL WIRE GALVANIZED,
FOR CLOSING THE OUTLETS AND INLETS
OF CARP-PONDS.

In consequence of the many inquiries in regard to this article, we have got the manufacturers to make us a special lot to order, for the above purpose. I have before explained to you the reason why we are enabled to get prices very much less than the ordinary price. The material (steel wire) makes it tremendously strong; and being thoroughly galvanized by dipping it in melted zinc after it is made, it is absolutely rust-proof. There are four meshes to the inch (8 mesh same price), and the price is 10 cts. per single square foot; 85 cts. for 10 square feet, or \$7.50 for 100 square feet. If wanted by mail, add 10 cts. per square foot extra for postage. We have only one width in stock; viz., 36 inches.

HUTCHINSON'S SHIPPING-CASE, FOR 14 SECTIONS,
FOR ONLY 6 CTS., IN THE FLAT.

W. Z. HUTCHINSON sends us a sample of his tent-case for shipping comb honey. You will notice by his advertisement that they are only 6 cts. each, in the flat. We presume this latter price does not include glass, since he does not say so. But in any case the price is very low for so good a case. We like it so well that, if friend H. has no objections, we will furnish them at his prices. The case is light and strong; and the narrow slip of glass, that gives us a glimpse of the nice comb honey, is so well protected that there is very little liability of breakage. Very likely a good many small dealers will take one of these cases where they won't care to invest to the amount of a case holding 24 sections. Although the

case is very light, it is strong enough to stand shipping, probably, without injury. It weighs only 2½ lbs., and can therefore be sent by mail to those living at remote distances, at an additional expense of 40 cents for postage.

INDUCEMENTS TO SUBSCRIBE EARLY.

ALL subscriptions received between now and the first of January, for the year 1886, will include the remainder of 1885 without charge. That is, any new subscriber who sends in his subscription before the year is out will receive the journal free for the remainder of this year, after his subscription is received. Do you ask why we are partial to new friends, to the exclusion of old ones? Well, we do not mean to be; therefore we will give every old subscriber, who remits between now and the 15th of this month, any article he may choose from our 10-cent counter, providing he specifies what article he wants, and sends the correct amount of postage, if it is to be sent by mail. Very likely you may not consider ten cents very much of an inducement; but there are little folks in almost every bee-keeper's home who will be glad enough to get it.

THE PRESENT NUMBER OF SUBSCRIBERS.

We are glad to be able to say that we have, at this date, 6618 subscribers. This is considerably higher than we have reached at any time before this year. Thank you; and while I think of it, I might mention that in our next issue we shall commence giving eight additional pages in the middle of each month. These extra pages will be occupied by an article that will probably go through all of 1886. The title of this serial will be, "What to Do, and How to Be Happy in Doing It." We expect it to be copiously illustrated with many fine engravings. The papers are especially intended for those who are thinking about something to do during the long winter months and evenings just now before us. Our older readers will probably rightly surmise that it will pertain specially to "Home Interests" and rural industries.

ANOTHER DRONE-TRAP.

MR. JOHN A. BACHELDER, of Keene, N. H., sent us a drone-trap last May that is not only a wonderful piece of mechanical ingenuity and workmanship, but it is a good deal ahead of any thing we have yet seen. The trap was given to our apiarist to test; but by the time he reported on it the letter accompanying it was mislaid. We humbly beg friend Bachelder's pardon, and will try to be more careful next time. The price is \$1.00 each, by mail. Friend B. says the trap was completed in July, 1883, and that a notice in regard to it was sent at the time. It works beautifully. We may have an illustration of it before another season opens. Friend B. says it will cage a queen, although we have never tested it in this respect. The bees, even when laden, enter almost as well as through the usual entrances, and the greater part of them come out the same way. The pollen is not scraped off.

A DROWNING BEE.

WE take the following from the *British Bee Journal*. It is worthy of the distinguished minister who wrote it:

Mr. Spurgeon writes as follows in the September number of the *Sword and Trowel*:—A poor bee had fallen into the pond, and was struggling as well as her failing strength would allow. We seized a pole, and placed the end of it just under her. She took firm hold, and we lifted the pole and the bee. A

little while was spent in drying herself and plumping her wings, and then our worker made a straight line for the hive, and doubtless was soon at her daily task rewarding us with honey. May not many a human worker be found in a sinking condition? A little sensible help might save him. Who will give it? He who does so shall receive the blessing of him that is ready to perish. Poor hearts are often in deep despondency, sinking for lack of a sympathetic word. Do not withhold it. Rescue the perishing. Be on the watch for despairing minds; if no other good comes of it, you will at least be more grateful for your own cheerfulness. But good will come of it in unexpected instances, and it will be heaven's music in your ears to hear sighs turned to songs.

KIND WORDS FROM OUR CUSTOMERS.

A KIND WORD FOR VOL. IV. OF GLEANINGS.

Please accept my thanks for being so prompt in attending to my order, and excuse my negligence in not before acknowledging the receipt of the same. Vol. IV. of GLEANINGS is more than I ever expected for 25 cts. G. SCOTFIELD.

Ridgeway, N. Y., Sept. 27, 1885.

AN ENCOURAGING WORD.

We received the last package of goods all right, and in better order than any preceding lot. I think they were packed more securely. Mail matter receives some very rough handling in coming all this distance, and needs very good packing. We were more than pleased with the goods, and wonder how you can sell so cheap. A. W. HINDE.

Anaheim, Cal., Sept. 4, 1885.

Inclosed find \$1.00 to pay for GLEANINGS. I like your talks on the practical, every-day topics that should interest us all very much; and although I do not keep bees, I am glad to read GLEANINGS for its high moral tone. May God in his providence give its editor long years of prosperity, is my prayer. A. D. HOVEY.

Chardon, O., Aug. 31, 1885.

A PLEASSED CUSTOMER.

The saw and mandrel I ordered of you came all right—just what you represented it to be. Thanks. I find I like the hum of it better since I use a 4-horse engine to drive it. I shall likely want more of your wood-working tools before long. I don't mean to flatter, but you are the best man to deal with I have found yet. N. F. HILLS.

Gilman, Ill., Sept. 8, 1885.

TWO NUCLEI PURCHASED JUNE 8 MAKE 7 GOOD COLONIES BY SEPT. 5.

As I was writing for some books this morning, I write you a few lines to let you know how the bees got along that I had of you. You shipped them on the 8th of June, and I got them on the 12th. They were at the express office on the eleventh, but I did not get your card till the 12th at noon. I had to go for them in the afternoon a distance of eight miles; got them safely home, and in the hives that night. Three of them were for Mr. McDonald, and two of them for myself. My own have done very well considering the season, which has been so cold and wet. They have increased to seven good strong colonies. Your manner of doing business suits me well. I intend to try your plan of wintering on sugar this winter. J. S. MOORHOUSE.

Dealtown, Canada, Sept. 5, 1885.

A GOOD REPORT FROM THE NUCLEI WE SEND OUT.

The goods arrived all right and in good season. I was very much pleased with them, and I can not but wonder at the promptness and good condition in which they were received, taking into consideration the distance from which they came, which speaks well for your careful mode of packing, and endeavor to please. Nothing is left for me to do but to express my heartiest thanks for all you have done for me so far, and my confidence in all future dealings. Last Monday my brother and I opened three hives, and I had invited an old friend of my father's, who has been a bee-keeper for 30 years, to come and look at them, and he pronounced

them beautiful Italians, and that we had been wise to buy them, for it was really a bargain to get such bees in good 8 hives, and such populous colonies, at \$7.00 a hive. I tell you it made me feel well to have such an old veteran at bee culture talk so encouragingly, for he is apt to be very sarcastic, and depreciate things, unless they are really good. We saw the queens of all three hives, and you can imagine how eager we were to see a queen, having never seen a live one in our hives, and how pleased and astonished we were on seeing her, at her great size and beautiful yellow color. We noticed that there was not an over-abundance of honey in the brood-combs, but we suppose that considerable was consumed while transporting and in opening the hives. We think they will soon have enough for winter, judging from the way they are working.

Newark, N. J., Sept. 10, 1885. C. H. THEBERATH.

A GOOD REPORT FROM OUR 24-LB. 83.75 SCALES.

The scales ordered from your house, a short time ago, came to me in good order. I am pleased with them. They are better than I expected. The freight charges were \$2.50, making the cost \$6.25, laid down here. The same scales (but Fairbanks') cost \$12.00 to \$14.00 here. A word for the regular-sized section, $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$. I have taken out 5300 lbs. of comb honey this season. Out of the lot there was not to exceed 300 bulged, so they would not crate. There were more imperfectly filled sections, but not bulged. They are good enough for me, and I expect to let well enough alone. No separators. E. S. BROOKS.

Silverton, Oregon.

HONEY IN ENGLAND: HOW WE SUCCEEDED IN SHIPPING THE LAST LOT.

The last lot of honey that you sent was first class—nothing could be better—and the packing was superb—not a drop of honey lost. There has, however, been an immense increase in the production of honey in England during the last two years, and a vast improvement in the methods used; the result is, that there is now a very large supply of first-class clover honey raised in England. It can be got wholesale at 5 ds. and 6 ds. per lb. here, just half what it was two years ago. This is cheaper than first-class American honey, with cost of transport added. The stores with which I am connected find that at present they can get first-class honey cheaper from English producers; and while this continues, we shall not require honey from America. It is said that there is a vast importation of first-class California honey. I can not see how it can pay a man, who can get 5 cts. or 6 cts. a lb. for honey in America, to transport it to England where it will fetch about the same price. But I have since been told that high-class California honey is sold in Liverpool and London at 35 s. per cwt., or 37 ds. per lb., or 7½ cents per lb. I got a specimen, but it was not first-class clover honey. But although not first-class, I am surprised that it should pay any one to import and sell it at that price.

Oxford, England, Sept. 26, 1885. A. C. HAMILTON.

[Perhaps we ought to explain, that the above shipment consisted of 3000 lbs. It was all put up in iron-jacket cans, and two of them were crated together, so as to make a good strong package. Good sound corks were selected, of such size that they would go in only when mashed. They were then fastened with a strip of tin, soldered over the top, and we succeeded, as you notice in the above.]

THE CANADIAN BEE JOURNAL.

WEEKLY, \$1.00 PER YEAR.

D. A. Jones & Co., Publishers, Beeton, Ont., Can.

The only bee journal printed in Canada, and containing much valuable and interesting matter each week from the pens of leading Canadian and United States bee-keepers. Sample copy sent free on receipt of address. Printed on nice toned paper, and in a nice shape for binding, making in one year a volume of 832 pages. 97th

Farm for Sale. 60 ACRES—75 improved. Two barns—good house and cellar. Living water, abundance of fruit of all kinds. One-half mile to R. R. Two miles to station. For particulars address N. L. HIGBIE, M. D., 214 E. 10th St., Elsie, Clinton Co., Mich.

CONVENTION NOTICES.

The Central Michigan Bee-Keepers' Association will meet in the Pioneers' Room, in the State Capitol, at Lansing, Mich., at 9 A. M., Nov. 12, 1885. Every one who has bees, or is interested in bee culture, is invited to attend. E. N. WOOD, Sec'y.

The Southeastern Michigan Bee-Keepers' Association will not hold any meeting here this fall, as the North American, the Michigan State, and the North-Western, all meet together within the territory covered by this Association (at Detroit), and it comes so close to the time of ours that we have concluded to attend there. A. M. GANDER, Sec'y.

Adrian, Mich., Oct. 20, 1885.

NOTICE TO BEE-KEEPERS.

I propose making an effort with the Canadian railways for reduced rates to Detroit N. A. B. A. (Dec. 8, 9, and 10). Will all bee-keepers who can or will use said railways to attend said convention, kindly drop me a card, stating the road they prefer to use, or the roads they could use in case arrangements can be effected with one line only? When we approach railroad men we must have some data to talk from.

S. T. PETTIT, Vice-Pres't
for Ont. Branch of N. A. B. A.

Belmont, Ont., Can., Oct. 15, 1885.

NORTH AMERICAN BEE-KEEPERS' ASSOCIATION:
HOW TO FIND THE HALL; HOTEL RATES, ETC.

Free and complete arrangements have been made for the next meeting of the North American Bee-Keepers' Association, to be held at Detroit, Dec. 8-10. Hotel rates were obtained at \$1.25 per day. (Their regular rates were \$2.00.) We secured the use of what is known as the "Red Men's Wigwam," a nice hall, directly opposite the hotel. It is well furnished and carpeted. It is located at 63 Michigan Ave., about 20 rods from the City Hall, so you will see that it is very centrally located. The Antisdel House, where the above rates were secured, is a splendid place to stop at. Mr. Antisdel has the reputation of keeping the best temperance hotel in Michigan, and, taking all in all, we were very fortunate in securing so good a place, and in getting a hall so near. The committee are at work on reduced rates on railroads, and, so far, have succeeded in securing rates on all roads in Michigan and on all tickets sold as far east as Buffalo and west to Chicago. We are in hopes to get rates from New York, as far west as possible. The matter is in correspondence, and you will receive due and timely notice. Now that all arrangements have been made for a successful meeting, let every one come and make it a success. H. D. CUTTING.

Clinton, Mich., Oct. 19, 1885.

Plymouth Rocks. Fine, pure-bred Cockerles of this popular breed at \$1.00 each, if taken before Nov. 15. Satisfaction guaranteed. Ref. *Ed. Gleanings*. Address
20-21d YODER & METZLER, E. Lewistown, Mahoning Co., O.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column.

FOR SALE,

A SECOND-HAND TWO-HORSE-POWER
EUREKA ENGINE AND BOILER.

The above engine has been in use about five years; but Mr. A. F. Stauffer, of Sterling, Ill., of whom we purchased it, writes in regard to it as follows:

I guarantee the engine to be in good working shape, as good as it ever was. I had boiler examined last spring by a steam-fitter, and he pronounced it as good as new. I always used soft water. I am furnishing my shop with new machinery and am anxious to sell or exchange it. I have to get more machinery, and my two-horse power is too light.

Sterling, Ill. A. F. STAUFFER.

We will sell the above engine, to be taken at Sterling, Ill., for an even \$100, and we will put our guarantee on top of that of friend S. We obtained it of him in exchange for some new machinery, he, of course, putting in a larger engine and boiler.

A. I. ROOT, Medina, Ohio.

Paper Box for Section Honey

Our Box is the Cheapest
and Best Box Made.

—Only—



\$8.50 Per 1000
for 4½x4½ Sections.
Printing like cut, 75c
Per 1000 Extra.

Send 2-cent stamp for sample and Illustrated Catalogue of

Apiarian Supplies.

ASPINWALL & TREADWELL,

21-22d Successors to K., A. & Co.,

16 THOMAS STREET, - NEW YORK.

Bee-Hives, Sections,
FOUNDATION, ETC.

WITH a capacity of 7000 square feet of floor, we claim the best facilities for furnishing Supplies, in the southeast. **OUR NEW FACTORY IS EQUIPPED** with the best and latest improved Machinery, which enables us to furnish our goods "up to the times," and will furnish all kinds at **very reasonable prices.** Parties needing Supplies would do well to see our Price List before buying.

S. VALENTINE & SON,

21tfid HAGERSTOWN, MD.

READER,
DON'T YOU READ THIS.

We haven't any wonderful recipe for making \$1000 a day, or any kind of get-rich-in-a-week enterprise; but if you take a

MAGAZINE or NEWSPAPER,

the **BEE-KEEPER'S CLUB LIST** will tell you **how to save money.**

Bees Given Away for the Largest Club.
Send address, written plainly on a postal, to

E. H. COOK,

(Successor to G. M. Doolittle),

Andover, Conn.

21
BEESWAX WANTED.

We will pay 30 cts. per pound in trade for good yellow beeswax, delivered at our R. R. station. Give us a trial order, and see if we do not please you.

J. B. MASON & SONS,

21d Mechanic Falls, Me.

W. Z. HUTCHINSON,

ROGERSVILLE, GENESSEE CO., MICH.,

can furnish neat, white, basswood shipping-crates at six cents each in the flat. Sample, by express, nailed up, ten cents. 21tfidb

Xmas. 50 SCROLL-SAW DESIGNS, full size, for work-bing easels, brackets, etc., 10c. One 2-oz. silver case, American (Waltham) watch, \$9.00.

19tfidb J. L. HYDE, POMFRET LANDING, CONN.

Wanted. To contract (now) with a reliable party, male or female, to run my apiary next year, and make queen-rearing a specialty. Correspondence solicited.

21d J. B. MARSH, Collinsville, De Kalb Co., Ala.

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LET YOUR LIGHT SHINE.

I feel, when I read GLEANINGS, and find so much kindness expressed all through its pages, that I can only exclaim, "God bless brother Root!" Let your light so shine, that others may see; and seeing, may learn to walk in the ways the Master has pointed out.

F. L. SMITH.

Chittenango, N. Y., Sept. 1, 1885.

Here it is again—be careful! I did not expect you to serve me so. I thought you would send the two Carniolan queens in four or five days, but here they are in 48 hours. The matter needs no explanation. Fast trains and prompt attention put us near each other.

J. F. MICHAEL.
German, Darke Co., O., Oct. 22, 1885.

The untested queen purchased of you a few weeks since came to hand all right, and her worker progeny are beautiful three-banded Italians. Many thanks for the despatch with which the order was filled, as I needed her badly, having at that time only one colony and suitable brood for queen-rearing.

NASH.

Monroe, Ia., Sept. 21, 1885.

The Waterbury watch arrived by last mail in good order, and has been running two days, keeping good time—giving complete satisfaction. Please accept thanks. I hope to be able to send you yet other names of subscribers to your excellent paper, as there are other bee-keepers in this vicinity who should read GLEANINGS.

J. L. HOSKINS.

Newburg, Oregon, Oct. 26, 1885.

WHAT HE THINKS OF OUR SECTIONS.

The goods came yesterday; thanks for promptness. The sections are lovely. Why, Mr. R., I didn't know there were such sections as these. You never sent me any thing like them before. If I had only had them for my white honey!

Templeton, Pa.

E. H. MCCLYMOND.

HOW THE NEW SHOWCASE IS APPRECIATED.

The show-case has just arrived safely. It is very neat indeed. Your lawn-mower is also pronounced a perfect success, by all who try it. I fear I may have been very dull in recognizing what a public benefactor you are, in providing for us all these conveniences.

MRS. H. HILLS.

Sheboygan Falls, Wis., Sept. 3, 1885.

PRaise WHERE IT IS DUE.

With sincere gratitude I acknowledge the receipt of your statement, and—to balance account, I believe that, "such as you measure to others shall be measured to you again," etc. I have dealt mostly with you for supplies, and have been satisfied. You dealt fairly with me; of course, distance and freight sometimes interfere, then we have to struggle economy. Flattery is not my intention, only praise where it is due.

WILLIAM BROWNING.

Garden Grove, Iowa, Aug. 29, 1885.

GLEANINGS—HOW IT SUITS.

That GLEANINGS does dish up to us a "mixture" is one of the strong reasons why I can't do without it. Bro. Root, believe me, I would eat but one meal of victuals per day until I had saved enough to pay for GLEANINGS before I would do without it. May God bless you for your words. May you gain an abundant entrance for being faithful over a few things, is the prayer of your brother in Christ. Go on in the good work. I, with thousands of others, am praying for you.

CHARLES I. SEELEY.

Greenville, Mich.

KIND WORDS, AND NO MISTAKE.

I have received and read the GLEANINGS sent me, and, like Mr. Higgins, of Louisiana, it brings me to my feet to say I admire your course in "mixing up" a little good that will make people better, as well as good bee-keepers. It causes me to send for GLEANINGS, and I hope thousands of others to do likewise. My bees are doing well. The only enemy to bees in this part of Texas is the moth. I never saw in print any thing about our best source for fall honey—the live-oak balls. I think it accounts for bees wintering so well in Texas. I have 106 hives, mostly Simplicity.

M. SIMPSON.

Gatesville, Coryell Co., Texas, Oct. 26, 1885.

KIND WORDS FROM OUR CUSTOMERS.

It is a pleasure to deal with one who is as prompt and reliable as I have found you.
Southington, Conn. E. J. WHITEHEAD.

The extractor arrived in good condition this morning. We have tried it, and are well pleased with it. Many thanks for your promptness.
Pickering, Md., Sept. 16, 1885. G. B. MCARTHUR.

REPORT FROM THE NEW JOHNSTON FORCE-PUMP.

The pumps work like a charm. They are the best cheap pumps that were ever introduced here.
Quincy, Mich., Oct. 30, 1885. FRANK D. CALVER.

I have raised some of the finest queens I ever saw, from that select queen I got of you. Their bees are the most gentle and finely marked I ever saw. The old queen is doing well yet.
Cassville, Mo., July 24, 1885. A. N. TWILLIGEAR.

DOES IT PAY TO ADVERTISE IN GLEANINGS?

Judging from the correspondence that I have already had, I think you had better not insert my ad't again. Many thanks for your extensive advertising medium.
J. W. HART.

Eureka Springs, Ark., Sept. 22, 1885.

OUR EXTRACTORS AT FAIRS.

I have been very busy, and have been at several fairs. I got a silver medal at the New England and first prize at the State Fair on your extractors.

W. H. NORTON.

North Madison, Me., Sept. 28, 1885.

The goods ordered of you have arrived and been unpacked. They all came in splendid order, and give general satisfaction. We think that the pumps will be all right, although they are of a different pattern from what we have been selling.

Portland, Or., Sept. 26, 1885.

MILLER BROS.

OUR HONEY-TUMBLERS AND LABELS.

My labels have been received, also the 100 honey-tumblers. I am especially pleased with your mode of packing. The freight charges were very reasonable, only 75 cents for the tumblers.

WATSON ALLEN.

Bernardsville, N. J., Sept. 22, 1885.

OUR COMB FOUNDATION.

I received the one pound of foundation in due time. It being my first to handle, I was surprised to see the neatness in the work, also the manner in which it was packed. It was all right—not marred in the least.

S. TURNER.

Erie, Kansas, Sept. 17, 1885.

The queens shipped to me Aug. 25th arrived yesterday, and were introduced; but I left in the tin slides until this morning. After finding the bees friendly I withdrew them, and feel sure all will end well. Thank you for promptness and kindness. These keep your customers. I try to keep a small sum with you against which to draw orders; but sometimes I can not do it; but my requests are always honored by you, for which I thank you.

MRS. W. W. WILSON.

San Bernardino, Cal., Sept. 3, 1885.

DOES IT PAY TO ADVERTISE IN GLEANINGS?

Last winter I got a carload of hives. In the lot I got 100 of the A. I. Root Simplicity hives. I sent an advertisement to GLEANINGS, and to two other papers, but I do not know that I got a single return from any but GLEANINGS. Parties sent for price lists as far south as Texas, west as far as Nebraska, east as far as Pennsylvania, and north as far as Michigan. Not a single one wanted the 17% frame—all wanted the Simplicity hive, or that frame at least, so you see my 100 hives were soon exchanged for bees, in other sorts of hives. J. R. LINDLEY.
Georgetown, Vermilion Co., Ill., Oct. 17, 1885.

HOW OUR SUPPLIES GIVE SATISFACTION.

The goods which you shipped to me Aug. 12th came to hand in good condition, and very promptly too. They were at the station within a week after I mailed my order, which is quick work, as they came by freight. I took the extractor, hive, comb-basket, swarming-box, and honey-knife to the Crawford Agricultural Society at Conneautville. All took first premium but the honey-knife, which took second. There were two other hives to compete with yours. The extractor attracted much attention. Very few ever saw an extractor in this part of the country. GEO. SPITLER.
Mosiertown, Pa.

HONEY COLUMN.

CITY MARKETS.

NEW YORK.—*Honey*.—The market for comb honey is quite active, and demand good, although prices are gradually shading, owing to the fact of many producers selling their entire crop in this city at very low prices, thereby enabling purchasers to sell below the market. We know of large crops having been sold here at 9@10c. for fancy goods. In consequence of no honey coming from the west, we can see no reason why good prices should not be obtained, except above stated. Present quotations are as follows:

Fancy white comb honey, 1-lb. sections	- -	14@15c
" " " " " 2-lb. "	- -	11½@12½c
" buckwheat " 1-lb. "	- -	11@12c
" " " " " 2-lb. "	- -	9@10c

Off grades, 1@2c per pound less.

Oct. 28, 1885. McCauley & HILDRETH BROS.,
34 Hudson Street, cor. Duane St., New York.

CINCINNATI.—*Honey*.—There is a very slow demand from manufacturers for extracted honey, with a large supply on the market, while the demand is very good for clover honey in square glass jars. Prices for all qualities are low, and range from 4@8c per lb. on arrival. Supply and demand are fair for choice comb honey in small sections—which brings 12@15c. per lb. on arrival.

Beeswax.—Good yellow is in good demand, and arrivals are fair. It brings 20@22c per lb. on arrival.

CHAS. F. MUTH,
S. E. Cor. Freeman and Central Avenues,
Nov. 10, 1885. Cincinnati, O.

CLEVELAND.—*Honey*.—There is quite a demand now for choice white 1-lb. sections at 14@15 cts., and all lots of new closed out. Of old, we still have a good supply, which sells very slowly at 10@13. Extracted seems to be in some request, and choice white would sell at 6@8c. *Beeswax*, very scarce at 22@25.

A. C. KENDEL,
Nov. 10, 1885. 115 Ontario St., Cleveland, O.

ST. LOUIS.—*Honey*.—Market rules as follows: Extracted Southern, in bbls., 4@5c. Half-bbls., 5@5½c. Northern, in cans, 8¼@10c. Retail—comb honey, white clover, 17@20c. in 1-lb. sections. Not much demand for dark. *Beeswax*, steady at 24@25c.

W. T. ANDERSON & CO.,
Nov. 10, 1885. 104 N. Third St., St. Louis, Mo.

BOSTON.—*Honey*.—We think we notice a little better feeling in the honey trade; but prices remain the same. White clover, 1-lb. comb, 14@16; 2 lbs., 12@14. Extracted, 6@8. BLAKE & RIPLEY,
Nov. 11, 1885. 57 Chatham St., Boston, Mass.

CHICAGO.—*Honey*.—We are having a very good trade in honey at present, which will likely continue until about the 10th of December. White comb honey in good order is firmly held at 15@16c; extracted is bringing 6@8c, according to body, flavor, and package. *Beeswax*, yellow, 25@26c.

R. A. BURNETT,
Nov. 10, 1885. 161 So. Water St., Chicago, Ill.

MILWAUKEE.—*Honey*.—This market continues very nearly in the same condition on honey as when we last advised you. Demand fair, and stock not very large—room for more choice comb in 1-lb. sections. White, 15@16. Extracted, in bbls. and kegs, 7@8c.

A. V. BISHOP,
Nov. 11, 1885. 142 W. Water St., Milwaukee, Wis.

WANTED.—1000 or 2000 lbs. of nice white comb honey in 1-lb. boxes; must be cheap—Ohio honey preferred. Address, stating price,

B. T. BLEASDALE, 596 Woodland Ave., Cleveland, O.

WANTED.—200 lbs. of fall honey. Must be well ripened. Who will furnish the cheapest, in vessels holding not more than 100 lbs.? Send sample, and state price. W. H. LAWS, Ft. Smith, Ark.

Wanted. Situation with some bee-keeper. Have had three years' experience.
22tfdb W. C. WRIGHT, Reagan, Falls Co., Tex.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column.

EXCHANGE DEPARTMENT.

Notices will be inserted under this head at one-half our usual rates. All ads intended for this department must not exceed 5 lines, and you must say you want your ad in this department, or we will not be responsible for any error.

WANTED.—In exchange for new varieties of strawberries and raspberries, Plymouth Rocks, Light Brahmas, Pekin Ducks, new varieties of potatoes, and small-fruit plants, cherry and quince trees. P. SUTTON, Exeter, Luz. Co., Pa. 16-23db

WANTED.—To exchange one-half bushel of extra fine white clover seed for alsike clover seed. 19tfdb M. A. GILL, Viola, Rich'd Co., Wis.

WANTED.—To exchange money or honey for a Normandy male hog, 8 to 12 months old, or improved Chester White. Must be a fine hog. Address J. B. MURRAY, Ada, Hardin Co., O. 22tfdb

WANTED.—To exchange bees and queens for a good printing-press, with furniture and type. Give description and price. Address Box 2, Benton, Bossier Parish, La. 22tfdb

WANTED.—In exchange for Italian bees, 40 acres of good hammock land on Manatee River, Florida, suitable for all tropical fruits, sugarcane, vegetables, etc.; good bee country, no apiary within miles. Address F. SCHINDEL,
22tfdb Fort Ogden, Man. Co., Fla.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column. 3btfdb

TILLINGHAST'S FAMOUS PUGET-SOUND CABBAGE SEEDS are being introduced in every section of the country in a novel way. Instead of depending upon seedsmen to catalogue them, Mr. Tillinghast is appointing some person (usually a cabbage-grower, who knows what good cabbage seeds are), in each town throughout the Union, to act as agent and sell to his neighbors. Parties interested in selling or planting cabbage seeds may learn something to their advantage by addressing Isaac F. Tillinghast, La Plume, Pa. 22d

DADANT'S FOUNDATION FACTORY, Wholesale and retail. See advertisement in another column. 3btfdb



Vol. XIII.

NOV. 15, 1885.

No. 22.

TERMS: \$1.00 PER ANNUM, IN ADVANCE; 2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00, 10 or more, 75 cts. each. Single Number, 10 cts. Additions to clubs may be made at club rates. Above are all to be sent to ONE POSTOFFICE.

Established in 1873.

PUBLISHED SEMI-MONTHLY BY

A. I. ROOT, MEDINA, OHIO.

Clubs to different postoffices, NOT LESS than 50 cts. each. Sent postpaid, in the U. S. and Canada. To all other countries of the Universal Postal Union, 15c per year extra. To all countries NOT of the U. P. U., 42c per year extra.

OUR OWN APIARY.

SIX HIVES KNOCKED OVER BY A RUNAWAY HORSE:
LATEST SPECIAL FROM THE SCENE OF ACTION.

NOV. 6.—This afternoon, about 1:30 P. M., the new horse, "Meggy" (the one that fills Nancy's place), while on the outskirts of the apiary took flight and started to run. Wheeling abruptly about, she upset the wagon, precipitating Messrs. Weed and Somers violently to the ground. Neither, however, were hurt. Kicking furiously, she dragged the wagon half through one of the apiaries, knocking over grapevines and hives with a vengeance that was calculated to clear the track of obstructions of any kind whatever. The wagon becoming wedged among the hives and grapevine trellises, she commenced kicking again, until she had freed herself; but the thills still clung to her as she dashed on. At this juncture I leisurely made my way to the hives, for I am notoriously slow sometimes. The horse was rapidly escaping up the road, while her pursuer, having picked himself up, was laboriously plodding after. Meantime the apiarist, who evidently did not relish this situation, was doing his best to set things right side up, screwing his face, as he did so, in a manner that betokened pain, while with quick jerks he rubbed from his hands the stings which

THE INFURIATED BEES

were inflicting. I soon was there with veil and smoker; and not long after, the hives were at least right side up. One was turned completely upside down, and the other five were either thrown upon the sides or pretty badly jammed, to say nothing of broken frames. The colonies had already been

packed for winter. After the mishap there was a mixture of combs, chaff, and bees—the latter, of course, boiling out like mad hornets.

Nov. 10.—The hives are all put to rights now; the wagon is repaired, and Meggy, apparently uninjured, draws the market wagon as before.

Moral.—Be careful with high-spirited horses near the apiary.

LOOK OUT FOR SMALL BOYS.

Once or twice we have been annoyed by having the slates displaced, upon which the record of the hives was kept. A little investigation showed that a

SMALL BOY

bearing the name of "Huber" had been there. Even at this early age he manifests quite a fondness for busying himself among the hives. Whenever he is missing, and the accustomed racket has become lulled, we invariably suspect mischief; so in this case. He thought it rare fun to pull those slates off the hives, and then pile them up in little heaps, or scatter them in every direction. Taking into consideration the number of imported queens in the apiary, this might have been pretty expensive business, had, not, fortunately, the apiarist already marked these hives independently of the slates. Otherwise we should have been in a "peck of trouble."

PUTTING THE BEES INTO WINTER QUARTERS.

In my remarks here I shall particularize how our bees are put into winter quarters, for the benefit of those who may wish to know just how *we* do it. I therefore hope the veterans will excuse me if I seem to indulge in a little repetition.

As stated in a previous number, every colony we have is packed in chaff hives—each having five or

six frames of sealed honey. Every comb is held up to the light; and if its contents are not clear of dark honey, or last year's honey-dew, it is rejected, and saved for spring feeding. The Hill device is placed over the center of the brood-nest, with its backbone parallel to the frames. Over this is next placed a sheet of burlap, a trifle larger than the inside dimensions of the chaff hive. A layer of loose chaff, two or three inches deep, is then strewn over—dished in the center, and deeper around the sides, to allow for the convexity of the chaff cushion which is placed on top. This arrangement, while it permits the escape of moisture, renders it impossible for a cold current of air to blow around the cushion into the swarm.

We have now just 186 colonies packed in this manner, after doubling up. It was in just this way that we wintered our bees last year, with, however, the exception that they now have honey instead of sugar stores.

WHICH IS BETTER, WHEAT OR OAT CHAFF?

We very much prefer wheat chaff to oat chaff, as the former seems to be a better absorbent, while the latter, though possibly equally good an absorbent, does not dry out. Colonies last year that had the oat chaff did not winter nearly as well; the chaff was wet and moldy, and had become matted down. On the contrary, the wheat chaff was nice and dry. So this year we have nothing but wheat chaff on all the hives.

ERNEST R. ROOT.

TWO QUEENS IN A HIVE.

ALSO SOME KIND WORDS.

THE goods shipped as per my last order (by mail) were duly received. Thanks for your prompt attention. All goods came to hand in first-class order. The hammers, No. 3, I consider the prettiest I have ever seen, both in size and finish; and the little planes, price 15 cts., are regular "daisies." In fact, I would not take a dollar for mine, and do without it. You can say to all carpenters, that these planes are just the handiest siding plane they can get, as one can be carried anywhere in the apron pocket, and no matter if you are at work on a scaffold, you have your plane with you. I am a practical mechanic, and know whereof I speak.

I have something to report which I never heard of before; that is, two young queens, Italians, remaining in the same hive for one season, laying peaceably side by side. The facts in the case are as follows: Last April a fine swarm of Italians came out of the hive and were duly hived. The seventh day, being on the lookout, I heard a piping in the hive (the parent stock), and of course I kept a lookout for a second swarm, which came about the 12th day. I noticed, in hiving the swarm, that there were two fine-looking young queens with it, both of which went in with the swarm. I kept a close watch, expecting, as a matter of course, that one of the queens would be killed; and as I never found a dead queen in front of the hive, I supposed that energetic workers had carried the extra queen clear off, so I gave the matter no further thought.

A few days, in looking over my hives I lifted out a center frame from the above-mentioned colony, and there I found two fine-looking Italian queens on the same comb, not two inches apart. How do you account for it? I can not find a similar

case mentioned in any of the bee-books, and I have "Langstroth on the Hive and Honey-bee," and have read the A B C, also a good many bee-journals. I can find cases mentioned of two queens in one hive—an old one and young one, but never two from the same lot of queen-cells. The queens are both good, as I have taken one of them and introduced her to a colony of hybrids, and she was well received, and both colonies are doing well.

Gonzales, Tex., Nov. 2, 1885.

M. BROERS.

Thanks for your kind words in regard to our little plane and other things, friend B.—Although cases are rare, where two queens of the same age remain peaceably in one hive, yet they have been mentioned in our past volumes; and it has been suggested, that, by selection, we could secure a race of queens not hostile to each other; and I confess that I can not see why the task is much more difficult than securing a strain of poultry that never sit.

LOSS OF QUEENS ON THEIR WEDDING-TRIP.

ALSO CAUSING THEM TO TAKE THEIR FLIGHT BY FEEDING THE COLONY.

WHILE attending the Kentucky State Bee-Keepers' Convention I heard the subject discussed in regard to the loss of queens on their wedding-tour. It was decided that it was owing to the disposition of the bees, which I think is true, as I have twice observed the bees balling their queen at the entrance, immediately on their arrival from their wedding-trip. Nothing was said in regard to a remedy for this. A few years ago I thought I had made quite a discovery, when I could induce my virgin queens to take their wedding-flight, even when the weather was not favorable, by tilting the hive back and pouring in half a wine-glass of syrup on the sixth day from the time of hatching. But when I read friend Alley's book I saw that he had made the discovery, instead of me, although he uses a feeder, to which I object. I do think, if you are careful in feeding so as not to attract robbers, that the feeding temporarily changes the disposition of the bees, and thus the life of many a queen is saved. This is according to my own observation, as I have very few losses since I adopted the above plan.

My nucleus hives consist of an extra box, such as is used in the upper story of the L. hive, with three permanent division-boards, permanent bottom, and a cover, two L. frames to each compartment, and one entrance at each side, and one at each end, two pieces of enameled cloth to cover the frames; thus any part can be examined without disturbing the others, and twenty-five such boxes are sufficient to run one hundred queens.

WINTERING.

I use the L. hive as friend Muth gets them out, with the extra box and ten frames in the upper story. I have had the best results when I leave this extra box on all winter with abundance of good honey, and the entrance-blocks away. A burst of sunshine does not make them rush out, and a cold wind can not reach the cluster. My objection to the above plan is, that so few have adopted it. I should like to hear from others who have tried it. Those that are not prepared as above are packed

with chopped oats straw. Our honey-board is in three sections. Take out the center one, move the other two toward the center, so as to leave one inch open over the ends of the frames, and about four inches open at the center; now lay the other board across the center, at right angles, and spread over all a piece of burlap. Pour in four inches of straw. I consider this an improvement on the Hill device, as it ventilates all around, yet holds the warm air directly over the cluster.

—WALT. S. POWDER, 50.

Groesbeck, O., Nov. 6, 1885.

Friend P., this plan of inducing the queen and drones to take their flight when the queen is of a proper age, by giving the colony or nucleus a feed of warm honey, is a very old idea. It was first given us by the Germans, and with some other features for getting Italian queens and Italian drones to take their flight while common drones were not on the wing, was called the Hobler method. It was a good deal discussed, and seemed to be finally dropped by universal consent. I do not remember, however, that the point was brought forward, that queens induced to fly this way were sure to regain their hives safely.—In regard to your plan of wintering, friend P., I agree with you, that plenty of ventilation, both at the entrance and over the bees, seems to be one great factor in succeeding.

THE WIDTH OF AN ENTRANCE.

THE COST OF STOPPING HEAVY MACHINERY.

A LETTER from Mrs. L. Harrison says that I did not tell all about Mr. Rufus Porter's winter management of bees, in Lewistown, Ill.; that I did not tell how much lower ventilation he gave them. Mr. Porter contracts the entrance to $\frac{3}{4}$ x 3 inches, and pays no attention to the snow at the entrance, unless there should be a sudden thaw, and the snow should get in the way of the bees flying out. He says, that when the entrance faces to the south there is not much danger of snow or ice clogging the entrance. The way he packs his bees, they would have plenty of air with the entrance entirely closed.

Yesterday, Mollyony and I started out to find apples and cider to make our supply of apple butter. Apples are very scarce and high-priced now, good hand-picked apples selling for \$1.00 per bushel; but we found some very nice snow-apples that had fallen from the tree, which we bought for 25 cts. a bushel. Then we went to the cider-mill. Now, the cider is made at the drain-tile factory; and to reach it we have to drive down a long narrow lane, past the graveyard on one side, and the slaughter-yard on the other; up a hill and past the factory, before we can turn around. Well, when we got just to the top of the hill our horses got frightened at some blankets that they use to cover the tile when it is drying, that were hung to dry near the road, and they pranced and reared and backed out, and lunged forward, and all the while the machinery in the factory that was grinding clay was uttering the most heart-rending groans and shrieks. It would go on groaning and clamping for a minute, and then, as if it had gathered strength for a grander effort, it would send forth one of those blood-curdling "scrouches" that seemed as if they would tear the

building all to pieces. Well, there we were, with a barb-wire fence on one side, and the hollow square on the other, where the machinery was, partly beneath the ground, and we were debating in our minds whether it would be better to be thrown on the barbs or down among the machinery, when they straightened out and went on all right. I drove as far away from the building as possible, and then left Mollyony at the horses' heads, while I went in to see about the cider.

The proprietor is very much of a gentleman. While measuring the cider (it was boiled down, three gallons into one, and I took home twelve gallons of cider in two two-gallon jugs), he told me all about his cider jelly. He has machinery on purpose, boils it with steam-pipes, and makes a very nice and cheap jelly. He runs it, while hot, into wooden buckets holding half a gallon, and covers them with a wooden lid put on with a twist so that it will not come off unless untwisted; he sells the bucket and the half-gallon of jelly for fifty cents. The jelly contains nothing but cider. He turned the buckets upside down, and the jelly never moved.

Pretty soon after we got there the machinery stopped; but before we were ready to go away it started up again with all its horrid noise. I asked him how long runs they made, and he said they would not stop again till dinner time, unless something got wrong with the machinery. I told him that I was in hopes they would stop about the time I started home, as the horses were afraid of their noise.

"Oh!" said he, "we will stop till you get by. Almost all the horses that come here are afraid, and we have to stop till they get away."

Then he spoke to the engineer, and before I had got in and turned around the dreadful noise had ceased, and I drove by the building all right. He went and took down the blankets (I had told him about them), and I had no more trouble.

Here is the point that I want to make: He stopped his machinery to let me get away, and he said he did it often. I suppose the stopping and starting-up took him five or eight minutes; and while it was stopped, all the men and boys stopped too. There seemed to be ten or fifteen of them, and he pays the men, I suppose, about \$2.00 a day. If they stop half a dozen times in a day his loss must be considerable. Now, if I were that man I would have the road clear on the other side of the lot, as far away from the noise as possible, and I would have a road twice as wide, so that horses might prance around a little without having to climb a wire fence or fall into a hole. I think it would be money in his pocket, besides being so much safer, as they never see the incoming teams in time to stop for them, but only the outgoing ones.

I had no idea, when I ordered those division-boards sent "in the flat," that they would be all in little strips. I expected a board and a top strip to hang them up by; but I ought to have known that no man could sell a solid board of that size for six cents. I had some fun nailing them together. I suppose that your men in the factory, with their work-benches, and clamps to hold them level, and the right-sized nails, and a good hammer, could make twenty-five of them in an hour; while I, with my best licks, could make only four in 40 minutes. In the first place, I could not get any nails that were just right. Nails large enough to stand the strokes

of the hammer would split the wood; the slim nails bent over, split open, and went crooked, so that about half the length came through on one side or the other. The old hammer was too heavy, and the new one too light, and I am fully persuaded that I do not know how to drive a nail. I succeeded, however, in making twenty of them hang together, and I then stopped to let my blue finger-nails and blood-blisters get well before I make the rest.

MAHALA B. CHADDOCK.

Vermont, Ill., Oct. 15, 1885.

Mrs. C., you are mistaken about the things that our men make. The division-boards are made by girls, and they have no tools except an ordinary heavy solid table, hammers of the proper weight, and nails exactly the right size. They have, however, had experience in driving these nails into the thin boards, so they will go right along with it as fast as they can drive, and they rarely have a nail come out at all. I would refer you to the remarks in regard to hammers and nails, on page 16 of our price list. One of our three-cent hammers answers very well for this work, but we must have nails of the proper size. Your experience illustrates what we have so often talked about—every one to his trade. But it seems to me that every bee-keeper ought to practice nailing until he or she is tolerably expert, and then you must have a good assortment of nails so you can choose just the proper one for the proper place. I would have at least three hammers for like reasons. We can furnish whole boards as cheaply, but they would warp and twist; whereas the narrow strips, when properly nailed, will stand dampness and sun, without checking or splitting or warping.

GALVANIZED WIRE CLOTH FOR OUT-LETS TO FISH-PONDS.

FRIEND PEIRCE GIVES US SOMETHING FROM PRACTICAL EXPERIENCE IN THE MATTER.

STEEL wire cloth, like sample, is kept in stock by dealers here for miscellaneous uses. I tried it for screens on sluices of hatching-ponds. At the first drainage of ponds it clogged very quickly; and upon cleaning with an ordinary scrubbing-brush it broke like straw paper; and but for a dip-net at hand, which we placed over the break, we should have lost our few small carp at a time when they were very valuable. Two months, when connected in this way, especially if one is zinc, will, when kept immersed in water, produce galvanic action, which will disintegrate one or both metals with greater or less rapidity according to the chemical ingredients held in solution in all water. In most of the waters of this region, galvanized iron "rots" rapidly. The sample which you send would become worthless within from four to six months. For fattening-boats or vats, the mesh is as near right as can be gauged; but the size of wire, which seems to be 25 plate-gauge, is many sizes too small. It should be not less than 18 gauge for a stiff and durable bottom. Screen, woven of that size of wire, can not be reduced to quite so fine a mesh as I could desire; but when heavily galvanized, the mesh will be sufficiently close to hold most kinds of food necessary for carp, and certainly the finest kernels of corn, when

expanded by boiling, and it is not probable that any cheaper food for fattening purposes can be found. Philadelphia, Pa. Nov. 9, 1885. M. P. PEIRCE.

Thanks, friend Peirce, for your very kind suggestions; but I feel quite certain that the waters of our vicinity would not affect this galvanized steel wire so as to cause it to rot in so short a time. I have been acquainted with the use of galvanized wire cloth for such purposes for a good many years, and I can not remember that I ever saw any that seemed to be wasting by age, even when kept under water. If I understand you, the heavier wire cloth is no better, only that it contains so much more metal that it would take a much longer time to dissolve away the zinc, and expose the iron or steel to the action of the water. We should be very glad indeed of reports from those who have used galvanized wire cloth for such purposes. The friends will please bear in mind, that *tinned* wire cloth and *galvanized* wire cloth are quite different articles. We have always objected to the use of galvanized wire cloth, or galvanized iron in any shape, for honey-extractors, or any thing of that kind, because the acid in the honey attacks zinc so quickly, making the honey unwholesome if not poisonous.

BOILED CORN FOR FATTENING CARP.

I am glad to know that you decide that boiled corn is the cheapest food for fattening carp. Ours take corn with avidity, after it has been soaked in water a day or two. A correspondent of the *Ohio Farmer* suggests placing the soaked corn on a little platform about six inches below the surface of the water. I can readily imagine the antics the larger fish would make in coming for their feed. We boil corn for culinary purposes very rapidly and cheaply by means of steam. The corn is put into a large deep stone jar, and a rubber hose connected with the steam-pipe goes down through the corn to the bottom of the jar. A large quantity can be boiled soft in a short time by this means.

HUNTING BEES ON THE ISLAND CALLED "BEES' NEST."

ALSO SOMETHING ABOUT FALSE STATEMENTS IN REGARD TO THE ADULTERATION OF HONEY.

IHAVE just received a visit from Antone Sweetser. He lives near the island on the Muskegon River called the "Bees' Nest," of which I have written before. It is interesting to hear him relate the almost incredible finds of honey there. Last summer, he says, he was hunting bees, and found the tree and a large cluster hanging on the outside. Thinking a new swarm had tried to enter a cavity too small to hold them, he thought them worthless, and so informed the family; but in about two weeks the boys insisted on cutting the tree, which they did; fortunately it fell on another small tree, and fell easily. Mr. Sweetser chopped in through the thin shell directly into the honey, and soon there was half a bushel of bees on the outside. They then got the crosscut saw and cut out a log eight feet long, mostly below the hole, and he says it is solid honey; in fact, he said there was a little honey above and below where they cut. They set it on end, and a few days later

they took the team, and now have it at home in good shape. He said they were flying nicely when he left home. I tried to buy them, but I could not. He finally said he would sell them after they swarmed next year.

Last fall, he says, they cut a tree and took with them a wash-boiler and two 14-quart pails, which they filled. Not getting it all, they returned next morning, and further up the tree they took out 60 lbs. more of nice white honey, by actual weight.

There is a number of Indians living near them, and he says that Indian John found in a large sycamore-tree, three swarms—one in the body and two in the large limbs. He declares, that from the body of the tree alone they took 300 lbs. of honey.

Mr. Sweeter is one of those whole-souled Germans whose veracity none can doubt. He makes me think of friend Muth. He has been keeping bees in box hives in the past, but has now ordered an outfit of chaff hives, and says he shall adopt the modern appliances. He had never seen foundation or a smoker until to-day. He carried home with him a Clark cold blast—the best extant for the money.

And now just a word in regard to "false statements in regard to the honey business of the country." I want to add \$500 to your \$1000, and let other bee-keepers fall in until we make it a million, and then let some of those disgruntled liars show us where they make and sell comb honey, where neither wax nor honey is used, and become a millionaire. I have had some annoyance and am mad. At some other time I will tell you about it, and how it came out.

Fremont, Mich., Nov. 9, 1885. GEO. E. HILTON.

Friend H., will it not be a good idea for somebody to start an apiary on this Bees' Nest island?—About false statements in regard to our honey, Neighbor H. says when they get their machinery perfected for manufacturing eggs, they will probably succeed in making comb honey.—Thanks for your additional \$500. I think the idea is a good one, and the investment is certainly safe.

MORE ABOUT 541 LBS. OF HONEY FROM ONE COLONY.

A GOOD SHOWING FOR ARKANSAS; SEE PAGE 754.

THE hive that made me 541 lbs. of honey is 41 inches long, 31 inches wide, outside measure; 40 frames in the lower story, and 40 above. The lower story is divided by two division-boards, which the queens can not pass; then four zinc honey-boards over them, making a perfect fit, and there are four separate queens. The bees are all together in the upper chamber. Each corner of the hive has an entrance. This hive is worth six single ones. A. L. LIGHT.

Grove Land, Arkansas.

Well, well, friend L., and so it transpires that it is *four* queens instead of *one*. Now, we might call it *four colonies* instead of *one*, were it not for the fact that the bees all work together. Although they do work all together, yet I am inclined to think they carry on business as four distinct colonies of bees. But if they continue to do so without any quarreling, or loss of queens, it is certainly something very strange and unheard of. I have known such arrangements

to prosper while the yield of honey was good; but when bees begin to rob, my experience has been that the queens will all have to go, but one.

THE WESTERN BEE-KEEPERS' ASSOCIATION.

QUESTIONS AND ANSWERS.

THE fourth annual meeting of the W. B. K. A. was held in the court house at Independence, Mo., at ten o'clock A. M., Oct. 15, 1885.

President A. A. Baldwin, of Independence, Mo., occupied the chair. The morning was taken up with the order of business. Report of secretary was read and adopted. The committee appointed by the North American Bee-Keepers' Society said that the following railroads gave first-class freight rates on honey in glass, and third class on extracted honey: A. T. & S. F.; M. P.; U. P.; and H. & St. Joe. The committee also suggested, that inasmuch as the transportation companies hold monthly meetings, a committee be appointed that has more time than the present committee, to prosecute the business further, by visiting these meetings; and, if possible, obtain a better schedule for bee-keepers.

The association next proceeded to elect officers for the coming year. E. M. Hayhurst, Kansas City, Mo., President; R. B. Leahy, Higginsville, Mo., Vice-President; James H. Jones, Buckner, Mo., Treasurer; and P. Baldwin, Independence, Mo., Secretary. The remainder of the morning session passed pleasantly in discussing several interesting topics relative to bee culture. There being no further business, the president appointed a committee to prepare subjects for the afternoon's discussion, and the association adjourned to 1:30 P. M.

AFTERNOON SESSION.

The association was called to order by Pres. Hayhurst, at the appointed time. Several ladies took seats with the bee-keepers; and although they took no part, they were very encouraging listeners.

The committee to prepare questions brought out the following, which were taken up in order:

Does it pay to feed extracted honey, in order to produce comb honey, and what way is best?

Mr. Conser.—"I think it takes about 3 lbs. of extracted honey to get one of comb, and I do not think it pays. I feed by tipping the hive back and pouring the honey in at the entrance. I do this at night."

L. W. Baldwin.—"I feed only to get unfinished sections completed, which can be done just as the honey harvest is closing, and not allow the bees to stop comb-building. There is money in it if carried out in this manner."

A. A. Baldwin.—"I have fed extracted honey for this purpose, and think it pays, but I have not tested it by actual weighing and experiments."

Which race of bees is best to keep, for the purpose of getting comb honey?

R. B. Leahy came forward with a plea for the blacks as far as getting white capped and finished-up comb honey for market. "I think they enter sections more readily before swarming, and are less disposed to swarm. All things considered, I prefer the Italians."

James H. Jones.—"I would not keep bees if I had to keep the blacks." Here the discussion was quite animated, in bringing out the different traits of the two races, but the association came down solid for the Italians. Other races of bees were spoken of, but no one had handled them sufficiently to be very enthusiastic over them.

What is best to winter bees?

L. W. Baldwin.—"I winter my bees in the cellar, and have found by the scales that, on an average, bees consume from ten to twelve pounds more honey per colony when wintered on the summer stand than when wintered in the cellar. This is quite an item in wintering a large apiary."

A. A. Baldwin.—"I think that outdoor wintering brings the bees through with more vigor, and they usually swarm earlier. I feel confident, that bees packed with chaff will consume at least 5 lbs. less honey than if not."

Pres. Hayhurst.—"I think chaff packing saves stores."

The general opinion was, that bees wintered on the summer stand could be crowded on to as few

combs as they can occupy, with 20 to 25 lbs. stores, and well packed.

Does it pay to use reversible frames and section boxes?

No one present had made any use of them, except Mr. Conser, who had used them, and was well pleased with them.

How far from each other should large apiaries be located, in a good honey country?

This question brought out, from several of the members, statements of long flights of bees in search of honey; but the opinion most generally accepted was that, if placed not less than four miles apart, there would be no conflict.

Association closed till 9 o'clock next morning.

The association met at 9 o'clock. The president not having arrived, Vice-president R. B. Leahy took the chair. L. W. Baldwin was selected to prepare the table of statistics. There being no other business to be transacted, the list of questions was taken up.

Does it pay the trouble to use wired frames?

A. A. Baldwin.—"I have had but very little experience with them, but all I have examined showed the wire."

John Conser.—"I have used them. Where a man is shipping bees, I think they are a great benefit. In handling combs at home they are not of so much use."

L. W. Baldwin.—"I have had, probably, as much experience as any one present in handling and moving bees for several years, and in all that time I have not had half a dozen combs injured, even if transported without springs; and as far as I have observed, I can not see any use for them."

R. B. Leahy.—"If I were going to run for comb honey, using a frame with a short top-bar, I would not use them. In handling, I would rather have them wired, especially for the lower story."

How can we remedy the turning-out of the starters in the sections, as the bees work them?

This question called out the experience of this season of several leading bee-keepers, and it was generally thought that the cause was the slow flow of honey, cool weather, and colonies light for bees. Some advocated using smaller starters, others turning the sections around, while others thought, that to crowd the bees would remedy it.

What direction is best to have the hives face in winter time?

R. B. Thorn.—"I would have them face the same way, summer and winter."

S. W. Salisbury.—"I have loose bottom-boards, and raise the hive in summer, and prevent the bees from lying out, and let them down on the bottom-board in winter. I think the hives should face the south."

How should young swarms be handled, to secure the largest amount of honey?

L. W. Baldwin.—"I make a nucleus from the swarm, and put the rest in the parent colony."

A. A. Baldwin.—"A good way is to shut the swarm on five or six frames, and compel them to go into the sections at once."

Is there any successful way of introducing queens?

E. M. Hayhurst, having made the statement that he could introduce five hundred without the loss of one, was called on to give his method, which is as follows:

"After making the colony queenless I have a young queen caged in a Peet cage, and I place the cage directly over the cluster of bees, and leave it there till I see the bees are perfectly reconciled to the queen. This will take some two or three, and, sometimes, several days. I then remove the queen-cells and place the cage on an outside comb over some honey; remove the slide, and rim out a plug through the comb, letting the plug remain in place, and leave it undisturbed for a week. If the bees are disturbed before the queen begins to lay she will become frightened, running and piping, and the bees will chase and kill her. The important point is to have the bees reconciled, every cell out, and no robbing."

L. W. Baldwin.—"I have found that colonies long queenless are very difficult colonies to introduce queens to—almost impossible with me."

Adjourned to 1:30 P. M.

Closing session, President Hayhurst presiding. A member handed in the question, "What is the most simple, cheap, expeditious way for the practical bee-keeper to change his stock by requeening?"

L. W. Baldwin.—"I put in cells after the colony

has swarmed, and again immediately after the honey harvest, by taking the queen from the colony, and the next day give it a queen-cell."

A. A. Baldwin.—"I would just as soon as not have my colonies queenless for twenty days after the honey harvest, and would take this time to give them a queen."

S. W. Salisbury.—"I requeen with swarming-cells."

The question, "Is it advisable to clip the queen's wings?" brought out a lively discussion.

J. H. Jones.—"I prefer to have my queens clipped."

S. W. Salisbury.—"I have tried clipping the queen's wings, and I think it induces the bees to supersede the queen immediately. I also have a great deal of trouble in finding a clipped queen when swarming."

L. W. Baldwin.—"The ease and facility in handling swarming is much in favor of clipped queens. I like the practice."

A. A. Baldwin.—"I do not think that clipping the queen's wings causes the bees to supersede her. The past season with an apiary of 135 colonies, only two were superseded, and they naturally."

A great majority of the members practice it.

James D. Mendor was appointed to endeavor to get a better schedule on apianian products, of the railroad companies.

Adjourned, to meet in Kansas City, at the call of the executive committee.

W. B. Thorn, of Glenn, Kan., had on exhibition a colony of Holy-Land bees.

Mr. John Conser, of Glenn, Kan., made a display of extracted honey. There was no general display.

The following is the number of colonies of bees, pounds of honey and wax, represented:

No. of colonies last fall,	1,528
" " this spring,	1,138
" lbs. comb honey,	33,557
" " ext'd,	10,285
" " WAX,	196

P. BALDWIN, Sec.

BEE BOTANY,

OR, HONEY-PLANTS TO BE NAMED.

PLEASE tell the name of flower inclosed, as it is good for bees. I have a single stalk of it that the bees cover and fill up very quick.

Dennison, O.

CHAS. L. HILL.

PRIVET.

Here are four honey-plants. Can you tell me their names? The first is called by some, privet. Whether it is the same as that described by J. L. Gregg, of Arizona, or not, I can't tell. It blooms afresh after every rain in summer.

BEE-BUSH.

This grows among the rocks on the mountain-sides; grows from three to five feet high; is blooming now. The bush has a peculiar odor, but not unpleasant.

CATCLAW.

The next is what we call catclaw, but I am told it is not the same as that found in Southern Texas.

WILD SAGE.

The last is what seems to be a kind of wild sage. It has been blooming for some time, and the bees are gathering pollen from it. It grows in abundance here, and looks more like sage than any thing else.

Burnet, Texas.

C. W. HARDY.

IMPORTANCE OF SENDING COMPLETE SPECIMENS.

I can not find time to determine accurately the names from such poor specimens. The one from Chas. L. Hill is an aster (*A. prenanthoides* [?]). Of those from C. W. Hardy, one is of the order *Labiata*, probably *Mentha*; two are leguminous plants—the one with prickles, probably *Schrankia*. The other I do not know.

W. S. DEVOL, Botanist.

Agricultural Station, Columbus, O.

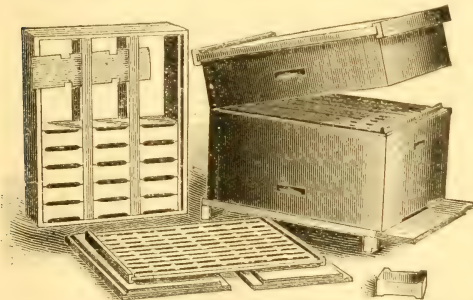
A REVERSIBLE HIVE AND HONEY-BOARD.

REVERSING THE HIVES INSTEAD OF REVERSING THE FRAMES.

HAVING read with interest the article in Sept. 15th number of GLEANINGS, entitled "Friend Shuck's Reversible Honey-Board," and because it is very similar to ours, we write to describe our reversible honey-board devised last January, and which we have been using this season with good results.

It is made entirely of wood, composed of alternate slats of pine and basswood, $\frac{1}{4}$ in. thick—see cut. The pine slats are $\frac{3}{4}$ inches wide, and are straight; the basswood are $1\frac{1}{2}$ inches wide, and have 5 insets cut in each edge (scant 3.16 in. deep), like those in section boxes, by means of a cutter-head, so that, when each alternate slat is placed together, first the straight, then the notched, as shown in cut, to form the honey-board, it makes the proper openings through which the bees may pass to the sections, or frames above, but excludes the queens and drones.

These insets in the basswood slats do away with the necessity of spacing and nailing each slat separately. You will notice, by examining the above cut, that the slats are held together by end-pieces, having a $\frac{1}{4}$ -inch groove cut in the center of each, and the honey-board is put together as follows: Put in first a straight slat, and nail to each end-piece, then drop in the groove each alternate one, until full, nailing the last one, and you have it. The honey-board is reversible, therefore it makes no difference which side is placed up, when putting it on the hive.



THE IDEAL REVERSIBLE HIVE.

The cut illustrates our modification of the Simplicity; we call it the "Ideal" reversible bee-hive, because the body is made of pieces, so rabbeted on the inside as to be, when nailed together, just alike at top and bottom. Now, by fastening down the frames, by means of a strip, $\frac{3}{4} \times 1 \times 15$ inches, laid across them near their ends, and screwed fast to the effect in the sides of hive, 10 suspended frames may be reversed at once by simply turning the body bottom side up. When so reversed, the honey-board and case, or the honey-board and another body, will go on just the same as if it had not been turned over. This makes it possible and practical to reverse our suspended frames already in use, without the trouble and expense of adding reversible attachments to them. Of course, reversible

frames can be used in this hive as well. The case illustrated above holds three rows of ten each, $1\frac{1}{2}$ -inch sections (making 30), with nine wooden separators, or 23 $1\frac{1}{4}$ -inch, without separators, and is made on the same principle as the body, and therefore reversible. The two strips running lengthwise at the bottom have a projection of tin to support the sections, while two similar strips at top are movable, being held in by a loose wire nail put through the ends of the case. The bodies, with a honey-board between, can be tiered one above another, as also the cases; or a case can go next to the bottom; and a hive with a honey-board between can be placed on top, just as one sees fit. This, we think, makes a practical working reversible hive, meeting the most of the advancing modern requirements; viz., reversible body and frames, reversible honey-board; reversible case and sections; reversible top. Are these points of any value? We have others in the above hive not mentioned. If you wish to examine a complete hive, we will send you one.

HEMPHILL & GOODMAN.

Elsberry, Mo., Sept. 21, 1885.

P. S.—The cut is not accurate in all its details, but fairly represents matters; for instance, the entrance is shown as if notched in the body of the hive, when in reality it is made just like the Simplicity, by pushing the body back and forth, the alighting-board being offset $\frac{3}{8}$ inch lower than the bottom-board. The honey-board, as shown in position between the hive and case, is not well represented, besides showing a notch in the end piece (projecting upward), as if it were in two pieces, when it is not.

Since writing the article we have improved upon the method of holding down the frames while the hive is reversed, so as to obviate the necessity of nailing or screwing the strips down, as spoken of in said article. The improvement consists in having a wobble saw cut made in each side-piece of hive on the inside. The wobble cut is made on the same plan as the handholes in the body and case, only not so wide, being but $\frac{1}{4}$ inch. This permits the strips used to hold the frames down, to be $\frac{1}{4}$ or $\frac{3}{8}$ inch longer, and they are simply pushed into these slots, which securely holds them, without the necessity of nailing or screwing—a very great improvement.

H. & G.

Friends H. & G., it seems to me there are some very important features in the hive you mention; but if I were you I would go a little further and have frames made without any projections at all to the top-bar. May be, however, you are doing that, but you don't say so. Then you can lift the frames out when the hive is one side up as well as when it is the other side up. There are grave difficulties in the way, however. The frames must be at fixed distances, for all I can see, unless we have a good many complications, and they must also be held in place the right distance from the end-board, and at the same time we want them easily removable. I do believe, that reversing the hive is going to be the readiest method of reversing the frames; but to do this we want to dispense with the projecting-end top-bar, as I have

mentioned. May be we shall never succeed in making it practicable; still it seems to me as if we ought to. The cover to your hive is substantially the same as Heddon's. Your method of making a slatted honey-board, I think, is more expensive than to cut suitable perforations in the board—at least so far as expense is concerned. Even if we don't adopt these various devices, I think it is an excellent plan to take a look at them, and consider well what is being done.

THE SHEEP-BEES LAWSUIT.

ALL'S WELL THAT ENDS WELL.

WE extract the following from the *A. B. J.* of Nov. 4:

The sheep-bees lawsuit was "called" at the Circuit Court in Richland Centre, Wis., on Wednesday, Oct. 28, 1885. It was dismissed by Judge Clementson, who decided that there "was no cause of action," and the jury was discharged. It may be argued before the Supreme Court, and should that Court determine that there is a "case," then it may come to trial on the ruling of the Supreme Court. The Bee-keepers' Union made such a stir, and showed such fighting enthusiasm in the matter, that the Judge made a thorough examination of the laws of the State and concluded that there existed no laws or rulings upon which he could instruct the jury.

We think that the bee-keepers of America have cause for pride in the success that has, so far, attended their efforts in this matter.

We shall watch the matter closely, and checkmate any move that may be made by the complainant, and now, at the close of the first combat, let us all jubilate.

Since this matter is so happily disposed of, we presume the bee-friends of the world at large may now take a long breath, and settle down easy—at least so far as any trouble on this score is concerned. Instead of lying awake nights, deciding as to whether or not they shall give up the business, we presume they will get all ready for next season's operations, with a broad smile on their countenances, not unlike the friend below.



"G-O-O-D M-O-R-N-I-N-G."

Below is an extract taken from a proof-sheet kindly sent us by the editor of the *A. B. J.*:

Opinion of the Court—Judge Clementson.

The Plaintiff, by attorneys, claimed that bees may trespass as well as other animals; that the bees of defendant came upon the premises of plaintiff and drove the sheep from the pasture; that it became a nuisance that should be abated, as other nuisances are, etc.

The Court—Is your claim for literal trespass or for nuisance?

Plaintiff—It is a trespass that becomes a nuisance because of the vast number of bees kept.

The Court—Have you any authority on this matter?

Plaintiff—We have none.

The Court—If you proceed upon the theory of nuisance, will you please tell where the nuisance exists—will you locate it?

Plaintiff—The bees were kept upon defendant's premises, and by him upon a farm joining plaintiff's premises, and they became a nuisance by coming upon the plaintiff's premises in vast numbers. This nuisance should be abated, as a bad stench should.

The Court—The stench is essentially bad, and may become a nuisance by being blown by the wind—it depends where it is located. Bees are recognized as useful. If you proceed upon this theory it will establish a new line of liability, and it is advisable at the outset to find its exact course.

Plaintiff—It is the maxim of law, that one person shall keep his own property so it shall not injure others. We claim that the defendant kept bees that injured the plaintiff's sheep—drove them from the pasture so they became weak and feeble, many of them dying during the following winter.

The Court—You do not allege that the bees stung the sheep, nor do you allege that they took any thing from the clover of value to the sheep—you simply assert that the sheep were driven from the pasture by the bees. We must understand whether you proceed upon the theory of trespass or of nuisance, so the nature of the damages may be determined.

Plaintiff—The theory of the prosecution is that of trespass. The presence of the bees upon the plaintiff's premises was voluntary. The nuisance lay in their vast numbers. By the new methods of bee culture the multitude kept in one place vastly exceeds those formerly kept. The bees are moved from place to place in quest of pasturage.

The Court—A man may pass over his neighbor's farm a dozen times, and he does not bring suit for trespass. Now if a man has a hive of bees, and it is trespass for them to go upon others' property, he would be liable to suit for trespass wherever a bee went. *It would fill the courts!* Every bee-keeper would have a "peck of trouble!" It would seem that if the sheep were driven from the pasture in the summer they might have been fed up in the fall to recruit them for the winter. I can see that, upon your theory, even flies would in certain cases become a nuisance for which a man might be prosecuted. Suppose the owner of a cane or sugar mill should locate it near a neighbor's property, and vast swarms of flies came to feed on the sweets, they might be a nuisance to stock in an adjoining field. If we proceed, it would be difficult to determine the extent of damages.

This case involves new points in law upon which there are no rulings of the Supreme Court. We have no law upon which to instruct a jury. I have made some inquiries to satisfy myself. As we must look to the Supreme Court for rules of law, it is better that this case be sent there at once. If the defense objects to any evidence under this complaint, the objection must be sustained, and the plaintiff may appeal on the ruling thereon.

The defendant objected as suggested, and the objection was sustained by the Court, and the plaintiff accepted.

HOW FAR WILL A QUEEN FLY TO MEET THE DRONE?

ANOTHER EXCEEDINGLY VALUABLE CONTRIBUTION TO OUR BEE-LITERATURE, FROM FRIEND MARCH.

I DON'T think that fact has been established yet; if it has, I have never seen it in print. I believe I established the fact, without the shadow of a doubt, that worker-bees would, in a scarcity of honey, fly 6 or 7 miles, or even more, for forage. See my articles in *GLEANINGS* for 1882, April No., page 181; again, Dec. No., page 589. I now have discovered how far a queen can fly, or, rather, how far one has flown; or, I should say, how far apart two hives can stand, and one furnish queen and the other drones, and the queen become fertile. Perhaps it would be interesting to some of the readers of *GLEANINGS* to hear my experience in queen-rearing.

In the spring of 1882 I sent to A. I. Root for Italian queens, and Italianized my apiary. Now, one and a half miles west of me a neighbor had three swarms of black bees. To keep my bees pure, of course I must Italianize his swarms. There comes in the first strange freak. I took out the black queens and gave each, 48 hours after, a cell from my best Italian swarm. At the same time I made four nuclei and safely introduced a cell to each. It being September, and no honey coming in, most of the drones, except in the hive where the cells were raised, were destroyed. We took pains to open the black swarm, and to kill every drone found, so as to make a sure thing of purity in mating. Now, mind you, his queens were $1\frac{1}{2}$ miles distant, while mine were in the same apiary with the drones. One would naturally suppose that the chances were two or three to one in favor of my queens becoming fertile. The fact is, that only one of mine became fertile, while all three of friend Crandall's, $1\frac{1}{2}$ miles distant, met the drones and commenced laying inside of 13 days after hatching, and proved to be purely mated. It seems that three of mine preferred to remain maidens rather than meet a drone belonging to the same family. I kept the three for 24 days, fed half a teaspoonful of syrup each day, but had to destroy them and double up the nuclei.

From the above it would seem that it is the queen that flies a distance to find the drone, rather than the drone flying in search of the queen. Perhaps nature has so ordered it, that there shall be no in, or close breeding. There was no difficulty about their flying, for the 14th or 15th day I threw them all in the air, in front of their hives (in the middle of a warm day), and they took wing and flew finely, and all three found their way back to the hives. One was gone 35 minutes, and was seen to return to the hive. Neither met the drone, and, in my opinion, because there were no drones at a distance to meet.

That winter, Mr. S. B. Best received a swarm of black bees in a box hive, as a present. They were set in his garden, just 27 paces from the corner stake of the section line of his claim, which is 7 miles in a direct line from section 28, where my apiary stands, and $5\frac{1}{2}$ miles from neighbor Crandall's three hives that I Italianized. The next summer, one of neighbor Crandall's young queens mated, and produced workers with one and two bands, and terrible to handle. That fall, friend C. disposed of his bees and they were taken from the island.

The next summer one of my queens mated. There was a study. Could one of my queens have flown 7 miles to meet the drone, or even half that distance? She had surely met a black drone somewhere, and there were no bees but Mr. Best's on the island, except my Italians. I finally settled it in my mind, that the black hive had cast a swarm, and they had come my way and settled in the woods within two or three miles of me.

This fall, 1885, I was out at friend Best's place for a few days' visit. While there he told me he had had the bees several years, and had not received a swarm of bees or a pound of honey from them yet, and asked me to open the hive and see if they could spare a few pounds of honey. Now you can judge what was my astonishment, when I came to examine them, to find as fine a swarm of hybrids as I ever saw. They had the peculiar characteristics of the bees where the black queen meets the Italian

drone. Part of the bees were perfect three-banded Italians, while part were black, like the queen. Here was no mistake. My drones must have met this queen, and she or they together must have flown 7 miles to meet, for neither myself nor friend Crandall ever lost a swarm of Italians, always keeping our queens clipped. Whether the queen flies to meet the drone or the drone to meet the queen, I can't tell; but between them they managed to make 7 miles, that I can prove; and more, every statement in this article I can prove by affidavit, if necessary.

H. A. MARCH.

Fidalgo, Wash. Ter.

Friend M., we are surely greatly obliged to you for the trouble you have taken to give us positive data on these unsettled points. Are we to understand that you are on an island, all of you? If so, you are situated in an unusually favorable position for such an experiment. My opinion is, that the queens will fly about as far as the drones, but that it may happen that the drone might go the greater part of the distance, or the queen the greater part; and it is not improbable that either queen or drone may fly as far as the worker-bees, say six or seven miles; but I feel quite certain they will all of them go a much greater distance over the water, or over a prairie, than they will over hilly or mountainous country interspersed with tall forest-trees. Many facts have come to light during years past, to indicate that drones and queens do go quite a long distance—I should have said from two to three miles in all directions. This, you know, would make a meeting possible from four to six miles; and with such a locality as yours, I should say seven miles might not be the *extreme* limit.

SOME ITEMS.

HOW AND WHY I CLIP QUEENS' WINGS.

I AM asked by several to tell in GLEANINGS how I clip queens' wings. The first thing necessary is a sharp knife. I use one, off A. I. Root's 75-cent counter, keeping the little blade sharp for this and other purposes. By the way, I find splendid stuff in these knives; for with one of them I have shaved myself, it doing the work equal to any razor. For clipping queens' wings I prefer a knife to scissors, for the reason that, with scissors, one is quite liable to cut off the legs of the queen, as she is apt to get a leg between the blades just as they are being shut. In clipping I catch the queen by taking the wings between the thumb and fore-finger of my left hand, when with my right hand I get out and open the knife. I now gently place the sharp blade of the knife on the wings of the queen, both hands being lowered to within an inch of the tops of the frames in the hive, when I carefully draw the knife a little, thus cutting the wings and letting the queen fall and run down into the hive. In this way the queen is not touched by the operation, and is never liable to be killed by assuming any strange scent from off the hands. The wings are also cut off, so but mere stubs remain, just as I desire to have them. There is no danger of cutting the fingers if you stop drawing the knife as soon as the queen drops.

WHY I CLIP.

The first reason is, to prevent the swarm abscond-

ing in swarming time, as I allow natural swarming. The second reason, and one perhaps equal to the first, is, that with queens clipped as above they are so readily found; for a bee with no wings among thousands with wings is quite readily seen. I verily believe I can find three queens which are thus clipped, to where I can find one not clipped. Third, swarming is conducted with more loss and less labor than is possible with queens having wings. Fourth, in case of the uniting of two or more swarms together I have absolute control of them so they can be separated at will.

CYPRIAN AND SYRIAN BEES.

After three years' trial of these bees I wish to say a few words regarding them. First, I find that in their purity they are so cross that it is out of the question for me to tolerate them. Smoke is only an irritant to them, unless used for five minutes before opening the hive, in large quantities at the entrance, in which case they will fill themselves with honey, and act like other bees. The hive can also be opened on hot days without the use of smoke, and all will go well if no jarring of the hive or any kind of a mishap occurs. If any thing of the kind occurs, woe betide the operator; as, for instance, I had been getting along nicely with my colony of Cyprians in the above manner, the past season, when one day a heavy gust of wind tipped over a frame I had stood outside the hive for a few minutes. In less than five seconds I was beset by a host of infuriated bees; and in spite of smoke or any thing else, before I could get the hive arranged and closed I received more stings than all I received during the season besides. Second, as soon as a colony of these bees became queenless the workers go to laying eggs, so that the combs are filled with drone brood, thus causing thousands of worthless dwarf drones to be reared, which is a positive nuisance, and a great drawback to them. Third, in this locality they do not begin brood-rearing in earnest until the main honey-flow arrives, when they breed to such an excess that much of what should be surplus honey is used up in brood-rearing. Especially is this true of the Syrians. For the above three reasons I have this fall banished all of this kind of stock from my apiary. From my experience with these bees crossed with Italians, I am led to believe that most, if not all, who recommend them have only Syrio-Italians, or Cyprio-Italians. Two or three years ago A. W. Osburn (now of Cuba) called on me, and was very strong in his praise of the Syrian bees, when, after some discussion, I showed him two colonies of pure Syrian bees. At this he exclaimed, "If those are Syrian bees, then I never had any." That crosses between the Syrian or Cyprian bees and Italians produce good bees, I am free to admit; but I can not see wherein they are any better than our ordinary hybrids, while I have reason for preferring our hybrids to them. Accordingly, another season will find my apiary entirely free from any trace of this blood in it.

G. M. DOOLITTLE.

Borodino, N. Y., Nov. 2, 1885.

Friend D., I believe your plan of cutting a queen's wing is a good suggestion; and I now remember, that in the absence of scissors I have sometimes done it with a knife in much the way you mention. The knife should have a very sharp edge, and the blade should be slender and tapering. I would suggest that this blade be used for no other purpose. Your reasons for clipping

are good; yet we dare not clip the queens we send out, for there are so many that might take exception, and we don't like to clip a queen just before caging her for shipment.—I believe your decision in regard to the Cyprian and Syrian bees accords mainly with the general feeling; although the trait they possess, of giving us unlimited brood on short notice, can often be utilized so as to make it very valuable, all things considered we may as well drop them.

AN ADVERSE REPORT FROM CALIFORNIA.

THE "BEE-LUNATIC" IN 1885.

HERE comes the "bee-lunatic" again—not with waving banners and beating drums, as he did in 1884. His drums are all muffled now, and his banners—inscribed with "Blasted Hopes"—are trailing in the dust. At the close of last season we had 115 colonies (GLEANINGS for Nov. 1, 1884, p. 738), of which 40 were below here, one mile. When we brought them home and opened them up there was a general fight. Do all we could, we lost 20 hives, so we had just 95 stands to begin on this season.

You remember I reported one ton of honey held over because it was not completely sealed up on the ends (we use eight section boxes fastened together, which we call a "box of sections"). Six of these boxes of sections go in the top story of our hives, and, when full, will weigh 84 to 85 lbs. I put this honey (fully a ton) on 25 hives. This was about 80 lbs. of honey to the hive. Now let it be understood, that each hive was booming full of brood, bees, and honey. If these bees had gathered five pounds of honey, and stored it, they would each have had their hive crammed full. They would have had no place to put any more. Each and every box of sections would have been completely sealed up.

Did they seal it? Well, you would naturally suppose they did—that they sealed it up in a few days, and then cried for more, wouldn't you? Well, I should; but they didn't—nary a cry. Right here is some promiscuous arithmetic. These bees worked hard for four months. I have lain down beside them, and watched them by the hour. They never even took time for dinner, but kept tumbling in and out of the hives the livelong day. Now the question is (and it puzzles all the arithmetic and algebra that I ever had any thing to do with), What did they do with the honey they gathered? It won't do to say they used it for brood-rearing, for they did not. There were but five swarms in the whole season, from the 95 hives. And by all means, don't tell me that these 25 hives of bees banded together to hoodwink and deceive me.

But here, you see, in the midst of all my pride and vanity they have knocked the stilts from under me, and left me groping in the darkness of night. What became of the honey they gathered? The other 70 hives—that had only foundation starters, made an average of 63 lbs. to the hive; that is, they gave us 420 lbs. in sections, and this is all we got. With comb honey at six cents, and it costing 14 cents per pound for sections, case, and hauling to town, if our hopes are not blasted, please state what will satisfy you in that line. Have we got to lose our whole apiary, nearly, like friends Heddon and W. Z. H.: to get our house burned down, to

furnish our horses with the epizootic, and be found ourselves, some morning, in the last gasp of expiring hunger, to get into "Blasted Hopes"?

This little insect that I have loved so well and praised so abundantly is a deceiver—a swindler and a cheat. He, she, or it, is a "fraud, a delusion, and a snare"—a robber, a thief, and a murderer. Now, you don't often read such plain talk in a bee-paper; but I just want the "little beast" to know exactly what I think of him.

THE HONEY SEASON IN CALIFORNIA.

The honey season here has been a very poor one. So far as I can learn, it is the same all over the State. You will have no great shipments of California honey to glut the markets *this* year. There was plenty of bloom, but there was no honey in the flowers. That was caused by an insufficient rainfall. We hope to do better next year.

A CLEAN WAY TO GET GOOD WAX.

I was always in the habit of boiling my wax in a bag, placed in a 2-gallon kettle made of galvanized iron; but one fine morning last spring my "biller busted" at the side. The more I tried to mend it, the more it leaked. I had to pour in cold water, and draw the fire. I did not want to pay six or seven dollars for another kettle. I let the matter lie until it could lie no longer. Then I wrote to you, to see if you could mail me one of your wax-extractors. The answer came, that it was not mailable. I lay awake at night, studying what I should do. Am I to be flanked—surrounded and beaten by a pusillanimous beeswax? Never! I jumped out of bed, into my clothes. An idea had struck me—hard! Mrs. Chaddock's plan was inadmissible. Mr. Porter's plan was destructive; Mrs. Harrison's plan was dirty and bothersome; Dr. Miller *just* missed the mark. We had a small sun extractor; but I went to work and made one 4 feet long by 24 wide on top. I lined it with bright tin, and put in a spout long enough to run through the wall of the honey-house. You see, I was preparing to extract honey as well as melt beeswax. That sun extractor, set on the south side of the honey-house, with pipe running inside of the house, was all that could be desired for melting small cakes of honey like mine. But, for wax it beats the world. Take Dr. Miller's large dripping-pan, with a hole "busted" in one end of it (I put a half-round spout in mine); grease the pan well, and lay a piece of old sacking in the bottom, just the size of the pan, except behind; let it come up far enough to catch hold of. Now raise your dripping-pan a little in the rear, and fill it up with wax. It doesn't make any difference how dirty it is. Now grease a big dishpan, and set under the spout of the dripping-pan. Put on your sash, and go about your business. In the evening all the nice yellow wax will be in your dishpan. In the morning fill up again, and so on until your dishpan is full. It will all be in one solid cake, for the wax melts alike, you see, in both pans. When you are done, the rag will readily pull out of the dripping-pan. Roll these rags up, tie them with a string, and put them in an old hive until you get for or five of them. You can then boil them. You will get a little cake of wax from them, which you can run through the dripping-pan process with the next lot. Now, here is no dirt, no watching, no boiling over; no bother or fussing, and *always* a clean, clear, yellow wax. I never could get two cakes of wax of one color before. All the wax is now nice and yellow. The dirt *does* not melt and run, consequently it

stays in the dripping-pan. There is nothing to clean up. Your dripping-pan is ready for the next lot, and is kept for that purpose alone. As for the rags, you would need to boil *them* out only once a year. If you are lazy, you can throw them away without losing much.

I see by Oct. 1st GLEANINGS, that friend Hart, of Florida, has got hold of the sun extractor for wax; but he, too, melts only the wax. The idea is, to get it in just the shape you want it for market, and the above plan does it all at one operation. Any plan to render wax that is thorough, complete, clean, and that will give a uniform bright color, must of necessity be very valuable to the average bee-keeper, and I am he.

Our loss of 20 stands, I should have said, was partly caused by moth. As we pay no attention to bees in this country, from the close of the honey until about the next February, any loss or death of a queen is sure to be followed by a loss of the colony. You folks think you know something about moth; but you don't. With you they are a nuisance; here, they are a besom of destruction.

We commenced on 95 hives; had 5 natural swarms, making an even hundred. After the season closed we made 52 three-frame nuclei. Here we can winter three frames, with a good queen, as well as nine. We now number 152 stands. None of these nuclei were made on the Doolittle plan. We did make one on that plan, but—well, you know its fate. J. P. ISRAEL.

San Dieguito, San Diego Co., Cal.

Friend I., I have for years been aware that a feeder, or some chunks of honey, or, if you choose, a dish of cappings, put into the upper story, at a time when honey is coming in from the fields, will have the effect of making the colony useless. I will repeat what I have given before, perhaps once or twice. When we first commenced extracting we thought to save the honey sticking to the cappings, by putting them on a honey board over a strong colony. The whole colony turned all its energies to fussing with those cappings, licking off the honey, and working the wax out into fantastic shapes. But while doing this they didn't increase an ounce in weight, while colonies right side by side were gathering 10 lbs. of clover honey a day. It would have been money in our pockets, a good many times over, to have dug a hole in the garden, and dumped the cappings into it, instead of putting them over the hive. New hands at the business often defeat themselves in just this way. They keep their bees fussing with feeders, or some trash that they want to save, when the bees might gather quite a crop of honey by going out into the fields. It may surprise some to know that bees will bring in more honey from the fields than they will take out of any kind of feeder you can fix. This fact upsets some of the talk about feeding bees sugar and glucose, to get comb honey.—In regard to the sun wax-extractor, I do not quite understand what you say about extracting honey as well as beeswax. And you speak of melting "small cakes of honey." What do you melt small cakes of honey for? Isn't it a fact, that the heat of the sun in your climate is much greater than it is here in the States, even in the summer? It seems to me astonishing, that the heat of

the sun alone, unaided, should melt beeswax. An arrangement of mirrors, or even some sheets of bright tin, would do it, of course; but in our experiments with cold frames in greenhouses we never yet have had any heat up to the melting-point of wax, that I remember. We see by the A B C book that wax melts at 145°. If the sun's rays are all utilized, and the space receiving them closely confined, no doubt we should get this degree, or more, during our warmest summer days. How many of the friends have used the sun wax-extractor in our latitude?

A REPORT FROM MRS. AXTELL.

HER VISIT TO MRS. HARRISON.

WE have gained much valuable information from GLEANINGS. The only trouble is, I can not keep them, as I find them too good to keep. I send them here and there, and then we find ourselves entirely without a bee-journal for reference, although we take three. Mr. Axtell and I are so glad that Ernest can take the place he is doing by way of help, both on notes on the apiary and children's corner. I think he will succeed in interesting the young folks, and I shall want to be young long enough to read them myself.

From about the 12th of Sept. to the 23d we had a wonderful honey-flow. We began to inquire where we could get sugar to feed up for winter, as many of our colonies were almost destitute; but in those few days many colonies that had not more than 10 lbs., increased to 40 or 50 lbs. of honey. We hope the bees will winter all right upon it, because it is so well sealed up. We have reduced the size of the hive to 4 and 5 combs spread apart, as some of our best bee-keepers have advised, and set the combs up one inch or more from bottom-board, and the hives to be wintered out of doors are packed on all 4 sides with dry chaff and on top, and we hope to escape the great loss in bees we sustained last winter. The combs are so solid with honey as to weigh from 6 to 13 lbs. I never saw so much brood and so much honey crowded into a brood-nest before.

We had several small colonies in August, too small to store comb honey, so we set upper stories over them and filled all with brood-combs, 48 combs, to be protected from the moth, combs left by dead colonies. First we partly covered the brood-nest, and then set in the combs. There was considerable honey in those combs, which caused brood-rearing, and I never saw such enormous colonies about Sept. 10, but scarcely any honey. We thought of dividing them into smaller colonies, but did not; but, how they *did* bring in the honey was astonishing. They had but little inclination to work in boxes; some of the stronger ones did, as we took away all those extra combs to get them to store in brood-nest for winter.

Last week Mr. Axtell and I made a visit to the home of Mrs. Lucinda Harrison. She is a lady of means, and I should think had no need of caring for bees; but she has a great heart, and does not live for self alone, but to do good, especially in caring for motherless children. Her husband was away from home upon one of their farms a few miles from Peoria. They have a young girl with them 9 years old, they have taken to bring up. She

is a very sweet, affectionate child. When asked to sing, she sang,—

"What makes the lamb love Mary so?"

The eager children cry;

"Oh! Mary loves the lamb, you know,"

The teacher did reply.

I thought that was the secret why Mrs. Harrison's lamb loved her so much—because Mrs. H. loved her lamb, for I never saw a more affectionate mother. I think she said she had 70 colonies of bees now. She lost quite a number last winter, and sold some in the spring. She is very determined to try to winter without so great a loss again. In her cellar she has been having a sub-earth ventilator put in. We were so pleased with it that Mr. Axtell, immediately on our return, began to arrange for one in our cellar, which begins in the bottom of the middle of the north part, and runs to the north of the house some 70 feet, and will take an 8 or 12 inch tile.

As Mrs. H. is acquainted with a good many of our prominent bee-keepers, and had visited some of them at their homes, it made a very enjoyable visit to talk with her. She mentioned a visit with Mrs. Mahala Chaddock, who lives in the middle of a beautiful large farm, surrounded with all the necessities of life; a visit with father Langstroth, for whom, when in his presence, she felt such a reverence; Mr. A. I. Root, such a meek man, whom all felt constrained to honor; Mr. Heddon, whose cases for box honey she had been trying this summer, were so neatly and well finished.

CLEANING WAX FROM TINWARE.

Noticing your suggestions in GLEANINGS, to heat tinware before rubbing off the beeswax, I would add, then pour on lye, and rinse around and wash off, and it will take off all that yellow tint, leaving them looking bright and new. If a box of what we should think was mostly propolis be poured into a boiler of hot water, the propolis will melt and sink, but considerable nice yellow beeswax will arise to the top, so that I always save all my scrapings, and much wax may be saved by boiling old bee-sheets covered with propolis, if one wants to be very saving, and has time.

In taking off our racks of honey it seemed almost impossible to get the bees all out; but the racks with the few remaining bees were put into the honey-house where many crawled out through a place made for them at the top of the window, and ran up the wire cloth; but others found the same way in again, but there were a good many formed into a cluster in the cone of the building. I told my husband I felt almost sure they had a queen, because they were building worker comb, which you know bees seldom do when they have no queen; so Mr. Axtell took a nail-keg and held it up close under the cluster, which would fill a two-quart measure, and quickly brushed them in, comb and all; there were but 3 small bits of comb, the size of the palm of my hand; but it had eggs in, showing that they had a queen. We put two combs of honey into the hive that I am certain had no eggs in, and poured the bees on to a white cloth, a small distance from the entrance to the hive, and let the bees crowd in. I caught and caged the queen, and gave to a queenless colony. I took the three bits of comb, with the eggs and a little honey in, and laid on top of the two combs that had no brood; the bees removed all the honey and eggs in a few days. I wished to unite them with a weak colony, and they had a nice cell built, and an egg in it; one oth-

er cell, but no egg. I think the bees carried that egg from that bit of comb, because it was but a few days after, that the bit of comb was laid on top, just about the same length of time that a weak colony would have built a queen-cell if eggs had been in the brood-combs. The bees were on the two combs I set in the side of the weak colony, with the least small place for the two colonies to crawl together. I think they did not all get together for three days, and I gave each colony a section of scrap honey. I can not see that they killed each other at all.

Mr. Axtell and I enjoy reading *Our Homes*, and *Myself and Neighbors*, very much, and we feel that we are always benefited by them. Ernest speaks of one of your colonies as appearing to have the "bee disease." I noticed two of ours troubled a little in that way this fall, spotting the alighting-board, and even on my hand, so I had some little fears about the consequences in the winter; but if we put them up to the best of our ability, we can only leave the result with God; and I am sure whatever the result may be, it will be all right.

Roseville, Ill.

MRS. L. C. AXTELL.

Mrs. A., just let your journals go as fast as people want them, and we will replace every one you give away; in fact, we will send you as many copies of each number as you think proper to distribute among your bee-friends and acquaintances. Of course, you would not want to give the same person a number each month, for then there would be no need of his subscribing. But we are always willing to furnish as many sample copies as our subscribers can make use of; and we will furnish any of our subscribers with any number of any particular issue, for that purpose.—We are very glad indeed to know of your yield of honey, even though it did come late in the season.—Now, Mrs. A., I want your husband to be sure to report how his sub-earth ventilator works. Let us know what size of tile he uses; and when it is below zero outside, please tell us the temperature of the air where it comes into the cellar. You do not say how deep the tile is to be put. Please mention that also.

G. S. BROWN'S BEE-FEEDER.

SOMETHING NOT EXACTLY NEW, BUT GOOD FOR ALL THAT.

IN regard to feeders, I have been bothered more or less with robbing. I have a feeder that you can put inside of the hive, and no robbing. Take a 2-inch plank and fit it in a frame; take a $1\frac{1}{4}$ -inch auger; bore the holes as close together as you can. Leave one in at each end, and bore within one-half inch of the bottom. Cut out about half way down, and you have a feeder that will not leak. I use sapling-pine plank. I do not plane the plank. Nail in the frame when made. I can make four in one hour by hand. Bees will not get drowned in them. I use a tunnel to pour the feed in. Pour in at one end until full. The bees will lie as snug up to the plank as they will with comb, and you can put the feeder in the center or outside the frames. I have made a good many for my neighbors, and they say that they are the thing to do

feeding. I have two swarms that I am going to feed all winter, as they need it. I winter in cellar.

Salisbury, Vermont.

G. S. BROWN.

I may explain to our readers, that the above is simply a piece of plank, as mentioned, cut so as to fit inside of an ordinary brood-frame. The auger-holes are bored from the top edge of the plank. After being bored and cut out as described, the plank is slipped into the frame, and nailed fast. Such a feeder will hold a quart or more; and as it occupies just the space of a good thick comb, it makes a compact way of giving the feed. The wood is as warm for the bees to cluster against as a comb of honey itself. Such or similar feeders have been in use before, and I really don't know why they have been dropped. We can furnish them for 25 cts. each, if wanted.

REPORT FROM I. R. GOOD.

FROM 7 TO 85 COLONIES.

THIS has been a good season here for bees. I left Tennessee June 18th, leaving my brother and his son, who is an experienced bee-keeper and queen-breeder, to take charge of my bees there. I arrived here June 20th, and found that I had but 7 colonies of bees left out of 65 last fall. I determined to run these for increase only, consequently I commenced dividing at once and kept it up all summer, dividing as fast as the bees would bear it. The result is, I have just finished packing for winter, 85 colonies of bees, all good and strong but about 8 or 10 rather weak ones. This was done without any feeding.

In preparing them for winter I have taken out several hundred pounds of honey that I have set away for spring feeding. The bees had but little comb to build, as I had nearly enough empty combs for the 85 colonies. There appeared to be a continual flow of honey all through the season—enough to keep the bees breeding, and keep them out of mischief. There was no time through the summer when robbers would bother while working with the bees.

The bees at no time this fall have killed off their drones as they generally do. We have had very nice and warm weather the last few days, and there were hundreds of drones flying. Is not this unusual for bees?

QUEEN-CELLS GOOD EATING.

This summer one of my near neighbors caught a runaway swarm of hybrid bees. He hived them, and they went to work with a will, and soon filled the hive with comb, and one case of sections. After the sections were nicely filled, the man took them off and gave them a case of empty sections; but a day or two after this he came to my house, requesting me to come and hive his bees, saying they had swarmed without saying any thing to him about it. I went to one of my colonies that had queen-cells about ready to hatch, and cut out two cells that were built close together, intending to put them in his hive in order to Italianize his bees. Before reaching his house his son met us to tell me that I need not come any further, because their bees had left; but I told the man I would go and look at the colony they came out of. When we got to the place I laid the queen-cells on the stand the hive stood

on, and proceeded to open the hive. In opening it I found the bees had absconded, leaving neither queen-cells nor bees behind, and the young bees would run out of the hive and drop on the ground in front of the hive as fast as they would hatch. After looking the hive through I looked for my queen-cells; but not seeing them I asked the man if he had picked them up.

"What," says he, "were those queen-cells? I picked them up and ate them, thinking it was honey."

His little son, who stood by, said, "Father, was it good meat?"

He said it was sweet. This was in the midst of basswood bloom.

My nearest neighbor, George Stuckman, who is one of your subscribers, purchased, on the 13th day of August, a swarm of bees that was the largest swarm I ever saw, and I think the largest I ever heard of. They weighed $13\frac{1}{2}$ lbs. I helped weigh them; and the funniest part of it was, this was the sixth swarm out of the colony they came out of.

Nappanee, Ind., Oct. 26, 1885.

I. R. GOOD.

Friend G., you know I told you some time ago that I didn't believe you would find as good a locality for honey in Tennessee as you have in Nappanee, Ind. The above corroborates my opinion. A swarm weighing $13\frac{1}{2}$ lbs. is a tremendous one, to say nothing about the six swarms from that colony, and as late as the 13th of August at that.—I have sometimes got brood in my mouth, when eating honey carelessly, and although I found it somewhat "sweet," as your neighbor did, it was almost too rich for my taste. If the cells you mention had queens nearly ready to hatch, I should have supposed he would have found the honey a little peculiar.—You know our good friend Langstroth says, in his book, he could increase from 10 to 100, by judicious feeding when it is needed; but you have done considerably better than that.

FROM 135 TO 210 COLONIES, AND 11,000 LBS. OF HONEY.

HOW SOON BASSWOOD, CLOVER, AND BUCKWHEAT, YIELD HONEY AFTER A RAIN; RED CLOVER AS A HONEY-PLANT.

ENCLOSED you will find my record of the daily yield of honey for 1885. In your remarks following my report for 1884, p. 692, you ask, "Did you keep a record so you can tell us if the temperature and moisture of the atmosphere alone produced these results, or is there a large flood of honey one day and but little the next, without any one being able to give satisfactory reasons why it is so?"

I was unable to answer your question then; but as I have this season kept a record of the weather in connection with the honey-record, I observe that white clover and buckwheat yield but little honey for several days after a hard rain, while basswood and red clover yield honey as soon as the rain ceases. In fact, some of the largest yields from the above were obtained the day following a hard rain-storm. They also gather honey very fast for a few hours preceding a very hard thunder-storm, when it is very hot and still.

As the record shows such a large amount from red clover, some may think that I am mistaken;

but I can say that I saw the bees *very thick* on red clover for two weeks, while I could find scarcely a bee on hundreds of acres of buckwheat in full bloom near my apiaries.

I commenced the season with about 135 colonies in three apiaries; obtained 11,000 lbs. of honey—5000 lbs. extracted, and 6000 lbs. in one-pound sections; increased to 210 colonies, in good condition to winter.

DAILY RECORD OF ONE COLONY.

Date.	Gain, lbs.	Loss	Temperature and Rains.	Ext'd.
June 24	1		Cold.	
" 25	2	2	Warm.	
" 26	4			
" 27	1	2	Cold.	
" 28	2			
" 29	3			
" 30	4			
July 1	4		Hot.	
" 2	3			
" 3	3			
" 4	3			
" 5	3			
" 6	1	2	Warm.	
" 7	2		Hot.	
" 8	2		Rain.	
" 9	2			
" 10	0		Cold.	
" 11	2		Warm.	
" 12	2		Rain.	
" 13	1			
" 14	0			
" 15	1		Hot; rain.	
" 16	1		Cold.	
" 17	0			
" 18	4			
" 19	1		Hot.	
" 20	1		Rain.	
" 21	1	2	Rain.	34
" 22	0		Rain.	
" 23	1	2	Warm; rain.	
" 24	10		Hot.	
" 25	0		Hard rain.	
" 26	2			
" 27	2			
" 28	1	2		
" 29	0			
" 30	1	2		
" 31	1			
Aug. 1	2			
" 2	0			
" 3	1	2		
" 4	1		Hot.	
" 5	1			
" 6	0			
" 7	2		1½ Cold; hard rain.	
" 8	0			
" 9	1		1½ Hard rain.	
" 10	1		Hot.	
" 11	3			
" 12	1			
" 13	1		Warm.	
" 14	5			
" 15	13			
" 16	14		Hot.	
" 17	12			
" 18	2			
" 19	0			
" 20	3	2	Cold.	51 1-2

Summary: Total gain, white clover, $62\frac{1}{2}$ lbs.; basswood, 111 lbs.; red clover, 115 lbs. Total, $288\frac{1}{2}$ lbs.

There was also a small daily gain from buckwheat later, and also from white clover previous to June 24th; but I kept no record of it.

Mauston, Wis., Nov. 1, 1885.

FRANK McNAY.

Many thanks, friend M., for your very valuable report, and the facts you give us. Our older readers will remember that E. E. Hasty, some years ago, gave us figures showing pretty conclusively that the increased flow of honey was almost always an indication of coming rain, and that a rain could be foretold by the sudden increased yield of nectar, indicated by the scales holding a suspended hive.—We have long been aware, that a hard rain stops, for the time being, the yield of white-clover honey; but I have never noticed that this same rule didn't apply to red clover. We presume your great yield from red clover was made from the common, ordinary kind, although you did not say so. It seems to me to be a fact, that red clover may yield large quantities of honey occasionally, but that only occasionally,

What to Do,

—AND—

How to be Happy While Doing It.

CHAPTER I.

Whoso findeth me findeth life.—PROV. 8: 35.

DEAR FRIENDS, I am very well aware of the magnitude of the task before me; namely, to tell every one who is out of employment, what to do. But even this would not be so difficult if it were not for the latter part of the caption to my book. I might possibly tell every one of you who is wanting something to do, something that you might do. For instance, I might tell you to go and dig a ditch, and drain off that puddle of water that has stood before your door. Very likely you would agree with me, that it ought to be done, and that it would probably pay in the long run to do it. Still, only a few if any of you would be happy in such a task. You would say, "I beg pardon, Mr. Root; but I have not got down to digging ditches for a living just yet," and so you would drop my book, and cut my acquaintance.

Well, when I propose not only to find something for you to do, but something you will be *happy* in doing, I certainly have undertaken a tremendous task. I suppose you know we can sometimes get children to do disagreeable work, and enjoy it too, by creating an interest in the work—sometimes by indirect methods. When a boy, my task was to saw and split the wood for the kitchen stove; and, as with the average boy, my good mother was almost always out of wood, especially when baking-day came. The work was so disagreeable to me, and I had so little heart in it, that I always got just enough for present needs. Sometimes, after she gave me a motherly reproof, I would start out with great energy and big resolutions; but in a very little while I would say to myself, "I declare, I must go and see to my chickens. What I have, will last fifteen minutes any way, and I am sure I will come

back before she can have time to want it." Well, reader, how do you suppose it turned out? No different from what it did almost every day. The wood was all gone; my mother scraped up the chips, and tried crowding great chunks into the stove-door, to get along, while somebody went after "that good-for-nothing boy." I was reminded of my remissness, perhaps, by hearing some of my brothers or sisters shout over the gate of my poultry-yard, "Amos, mother's clear out of wood again, and you are to come this very minute and get her a good lot of it." I had become so interested in studying my chickens, that I entirely forgot mother and the wood, and I fairly jumped in my shoes when reminded in this peremptory way. I went back, guilty and ashamed, and almost afraid to look my good mother in the eye; but, bless your heart! *she* knew how it was, and she did not look cross, nor did she scold. She understood her boy better than anybody else, and had no lack of charity and love for him, even though he didn't keep all his promises very well.

Well, shall I tell you what it was that all of a sudden made me love to saw and split wood, and even made me petition my father to draw another load, that I might cut it up? Yes, that something stayed by me until I worked with such energy that the sweat fairly ran down my boyish face; and I so loved to saw and split wood that I really disliked to stop long enough to go and get my dinner with father and mother and the other six children. What was it? Why, it was a new-formed purpose; and that new-formed purpose came to me one hot, sultry, summer afternoon. It was simply this: I got to thinking that I should like to build

a monument, and I wanted the monument away up high—higher than the one I made of snow and ice the winter before. The problem was, to get the building material. I couldn't buy lumber; stone was plentiful, but they were too heavy for me to lift, and I couldn't cut and put them together with mortar. Nothing presented itself better than stovewood. I well knew, without asking, that father and mother hadn't a bit of objection to my cutting up lots of stovewood ahead, and piling it up so the sun and wind would dry it nicely for the kitchen stove. At it I went, and up went the monument. Of course, the six children were anxious to know what new hobby that brother had got into his head now—one that even made him neglect his chickens somewhat. Of course, the only way to preserve my monument intact was to keep wood enough in a pile by the gate; and I was greatly tried sometimes, because some of my older sisters pulled wood out of my monument, instead of taking from this little pile. When I remonstrated, with tears in my eyes, they couldn't see that it made much difference where they got the wood. Mother saw the difference, though, and I presume she would have scraped up chips, and burned old chunks as before, rather than to have laid a finger on the structure that I had builded with so much boyish pride and enthusiasm. I wonder if the mothers who read these lines realize what a hold they may have on these boyish minds—a hold that they may keep through life, even when those boys are great strong men. Had it not been for the kind Christian counsel of this good mother, who knew me through and through, as no other human being did, I might not have been writing here to-day, with this beautiful little text at the head of my chapter.

The above little sketch illustrates what a difference it makes with the one who has work before him, whether he has a purpose and an end in view, or is simply working mechanically, without any purpose or end. Now, before I start out to tell you what to do, I want to try to awaken a purpose and an object in your hearts. Having a family on your hands to support, or being in need of the wherewith to purchase your daily bread, is an inspiring motive, or, at least, it ought to be such, I very well know; but, dear friends, I think there is a higher and a better one still, and I want you to start out with a plan for building a monument that shall not only go on through this life, but through the life to come; and I

want you to take into partnership with you in your undertaking, the great God of the universe. Whatever we do, we want to do it out of love to him. I want you to love his sunshine as I have been loving it for several months past, because it is *his* sunshine. I want you to love the gentle rain and the dews, because they are gifts he sends us daily. I want you to learn to love old Mother Earth, because it is his gift to man; and I want you to love the dumb animals about you, because they are his creatures. Furthermore, I want to show you how to appreciate these things so that you will love to make use of them for his sake. We want to learn to love the sunshine so much that we shall feel guilty if we lose even a little bit of it. We want to get up early in the morning, to enjoy the first glimpse of it. Then we want to be ready to go to bed about as soon as the last glimpse of it disappears. Even in the longest summer days, we want to be able to economize all the sunshine there is; and in the same way we would economize, as far as we can, all the rain and dew. We want to use these gifts as a faithful steward would use the money and property put into his hands. Do you begin to suspect that I mean to have you all become gardeners? Well, in one sense that is exactly what I have had in mind—at least, this far. No matter what your calling in life may be; no matter how you are situated, I feel sure it will add to your happiness to learn how to make things grow, with these aids God has given us. And even should it transpire that you may not have an opportunity at present of seeing things grow at all, I expect to give you general rules that will be great aids in making any business in life a success. One who can grow plants, and make them do his bidding, is prepared, to a certain extent, to make any other kind of business do his bidding.

I do not know how you are situated, of course; but my talk is principally directed to those who have leisure time on their hands; who have their evenings unemployed, or who have leisure during the winter months of the year. If you have unoccupied time during the usual growing season for plants, all the better. Neither do I know whether you are situated where frost and snow is the rule for nearly half of the year, or whether you are like the friends I met in New Orleans last March, who know nothing of any frost, sufficient to make it needful to have any kind of a cellar. Now, although my talks will be principally directed to those

who live as I do, where we have, on an average, from three to four months of winter, I expect these talks to be applicable, also, to those where winter is almost unknown. When I was a small boy, and was helping father raise a crop of potatoes, he remarked, that, if the weather were favorable, we should probably get a hundred bushels.

"Well, pa," said I, "suppose the weather is *not* favorable, how many bushels shall we probably get then?"

He replied, that we might not get over 25 bushels; but he added, in an encouraging way, "If the weather is favorable, it will be so for other people also, and the crop of potatoes raised will be so large they will likely bring only about 25 cents a bushel, giving us \$25.00 for the crop. If the weather is not favorable, other people will have a small crop as well as we, and the price may be a dollar a bushel; and in *that* case we should get \$25.00 for our crop. So you see it would not make any difference, after all. Our business is to do the best we can."

Now, I am going to add what father did not add then: That the expert farmer or gardener nowadays succeeds in getting a large crop, even if the season is unfavorable; and he may, if he is up to the highest recent attainments, get the 100 bushels of potatoes, and get the \$1.00 per bushel also; and that is what we are going to work for. In fact, that is what this book is intended to help you to do; and the principle is to be carried out all the same, whether you raise bees, chickens, strawberries, or potatoes. Take whatever God sends you in the shape of weather or opportunities, and make the best of them. Endeavor to see his loving hand through it all. If you are away down south, you can get bountiful crops with comparatively little exertion; while if you are up

north you will have to fight frosts and winter; but you will get higher prices on this very account. Sometimes farmers and gardeners get blue and discouraged because it rains all the while; at other times they get blue and discouraged because it does not rain at all. Now, let us shape our work so we shall have something to be thankful for. Let us make these forces of nature our friends, instead of our enemies. To illustrate what I mean: Several years ago I was greatly annoyed by the high winds blowing the bees down while the fruit-trees were in bloom, and I kept wishing we could have a day when the wind didn't blow. I finally told my wife that I was going to buy a wind-mill to make bee-hives, that I might be enabled to use this annoying and troublesome wind as a *servant*, instead of having it an *enemy*. At the same time I built a high fence around the apiary, and battened all the cracks, so that I had a small spot of ground that was tolerably tranquil, no matter how windy it was in other situations. Such wind-breaks pay all they cost, without any question, not only in bee culture, but in gardening and fruit-raising. Well, after I got my wind-mill all up, I wanted the wind; and I was so anxious to have it blow that I several times got up in the night to do my grinding and sawing. Thus you see I was fixed all right when the wind *didn't* blow, but I was fixed better still if it *did* blow. Brother Terry brings out the same idea in his potato-book. If a shower came up, and interfered with curing his clover, he consoled himself by thinking that his potatoes received more benefit than the clover received damage, and at the same time he did all in his power to protect his clover.

CHAPTER II.

Prepare thy work without, and make it fit for thyself in the field; and afterwards build thy house.—PROV. 24:27.

Our good old friend Horace Greeley used to advise the young men to "go west," as you may remember. I presume his idea was, that by going west they would find broad fields of fertile soil, where the results of their energies would bring good pay, and furnish comfortable homes for all. If you want to be a large farmer, no doubt the above advice still holds good. But my field of labor would be to commence at home, where you are. I have known a good many

young married people to go west, and after awhile come back to the very spot they left, poorer in purse, even if they were richer in experience. Now, if that money and time had been expended on a little piece of ground at home, it would have been far better. Horace Greeley had in mind broad fields. I would advise developing a few acres, or even one acre or less. From Peter Henderson's "Gardening for Profit," we extract the following in regard to the cultivation of

small patches of ground. It forcibly illustrates the point under consideration :

The passenger in the horse-cars going from Sixtieth street to Harlem, on New-York Island, any day from June to October, may see little patches of vegetation of different shades of green, ranged in uniform and regular lines. These are the "salad patches," cultivated mainly by German market-gardeners; they range from two acres down to a quarter of an acre in area. It seems a wonder that the cultivation of such a small plot of earth should give an able-bodied man a living; but a living it does give, in nearly all cases, and some have quite a respectable surplus for a "rainy day."

And now read the following :

Four crops of lettuce are usually taken from June to October, or nearly a crop each month. The plants are set about a foot apart each way, and will average one cent per head, so that the four crops give a return of nearly \$2,000 per acre. This seems like an immense return for an acre; but though the net profits are respectable, there are some serious disadvantages attending the cultivation. Few or none of these men are owners of the land, nor in hardly any instance have they a lease. They are tenants at will, and pay a yearly rental of, in some instances, \$250 per acre. Many of your country readers may think that an extra cipher has been added to the amount, but they must recollect that the value of some of these "salad patches," as they are called, is \$8000 per city lot, or over \$100,000 per acre, so that the paltry rental of \$250 per acre hardly pays the *interest* of the amount of taxes.

But, you may urge that these enormous figures were obtained in consequence of the proximity to the great market of the city of New York. Well, there is something in this; but there is something on the other side too. Last winter a good many barrels of lettuce were sent to our town by express, from one of our large cities. It retailed to our Medina people (and we are a town of less than 2000 inhabitants) at 25 cents or more a pound. When the trade commenced I started some lettuce in our greenhouse, and succeeded in getting heads that weighed a pound apiece, on an average. Now, in place of putting the plants at one cent per head as Peter Henderson has done, say 25 cents per head. What sort of figures per acre have you then? or what sort of figures would you get for the product of a little greenhouse, or even a few boxes of plants started in the window, and planted outdoors as soon as the weather would permit? The heads we raised were nicer and finer than any that I ever saw in the cities, or that came from the cities. But I hadn't the heart to ask over five cents apiece for them.

Now, I do not mean to advise everybody in the country, town, or city, to go to raising lettuce for a living. I have chosen lettuce only for an illustration, and I have, during the past year, demonstrated to my complete satisfaction that fine products of this kind will be quickly taken in almost any community, if the goods are properly brought before the people. The question may arise, "Is it well to encourage people in paying out their money for things of this kind that they would be just as well off without?" If you are going to seek first the kingdom of God and his righteousness, we do not want to go into any kind of business unless we can consistently and with a whole heart, ask his blessing upon it. I was at one time tempted to think that five or ten cents for a head of lettuce, or the same money for a stalk of celery, was an extravagance that perhaps ought not to be encouraged. Chemists tell us that a watermelon is 90 or 95 per cent water, or something of that sort. In that case, is it not sheer folly to pay 25 or 50 cents for a watermelon? A head of lettuce is, quite likely, 90 per cent water, or at least a large part of it, and nothing more. And so we might say of almost all kinds of garden products. They will do well enough for rich folks, where they have more money than they know what to do with. But, is it a kind of traffic that a Christian ought to engage in? My friends, I believe it is just exactly the kind of traffic that a Christian ought to engage in. Physicians have united, almost to a man, in pronouncing strawberries worth all they cost, on account of their health-giving qualities. A good many say the same in regard to garden-sauce of various kinds. Celery, for instance, has been recommended for years past; and after having made a careful test of the virtues of the plant, I think I am not mistaken.

During the fore part of this present season, my friends as well as myself were somewhat alarmed by a nervous attack that rendered it quite difficult for me to work in the office, reading letters, directing business, etc. A physician of considerable standing advised me to give up fruits and vegetables, and subsist principally on lean meat. He specially directed that I was to eat no vegetables during the latter part of the day. I began making careful experiments with many articles of diet. He was right in condemning certain fruits and vegetables; but I have proved, over and over again, that I could eat celery, right fresh from the garden, in great quantities, without any bad result.

I would go out after supper, and, after working among the plants, dig the crisp roots, and eat them down with as much relish, and with as little fear of consequences, as our Jersey cow would eat cabbage-leaves. I steadily improved, and, by working out-doors at the same time, I am now feeling so well that I read letters and dictate this book, hour after hour, without even any slight symptoms of the old dizzy feeling. My digestive apparatus is about perfect. I have tried crisp fresh lettuce, and it seems to answer much the same purpose; but I find I must have open-air exercise.

Now, dear friend, if you are ailing in *any* way, I feel strongly convinced that some open-air exercise, with fresh fruit and vegetables to eat, will help you.

Let me make another extract right here from Henderson's new book, "Gardening for Pleasure:"

About a dozen years ago I had the pleasure of making the acquaintance of a gentleman whose duties compelled him to be at his desk in a close office in the city of New York, from 9 o'clock A. M. to 4 P. M. Being naturally of a weak constitution, his sedentary life soon made him the victim of dyspepsia to such a degree that he felt that he must soon resign his situation. He was then a man of forty, entirely ignorant of any thing pertaining to country life, and it was with great misgivings and reluctance that, by the advice of his physician, he changed his home from a closely built part of New York to a cottage in the then country-like suburb of Bergen Heights, N. J. His means enabled him to purchase a modest cottage built on a lot 50 by 150 feet; he did not want the land, he said, but the cottage was such as he fancied, and the ground had to go with it. It was about this time that I formed his acquaintance, through some business transaction, and he asked my professional advice as to what he could do with his land, which he had already begun to consider somewhat of an incumbrance. I replied to him that, if I was not greatly mistaken, in his little plot of ground lay a cure for all his bodily ills, and that besides it could add to the comforts if not the luxuries of his table if he would only work it. "I work it!" he exclaimed. "You don't suppose that these hands could dig or delve," holding up his thin bloodless fingers; "and if they could, I know nothing about gardening." I told him I thought neither objection insurmountable if he should once begin.

The result of our conversation was, that he resolved to try, and try he did to a purpose. Our interview was in March, and before the end of April he had his lot all nicely dug over, the labor being done by his own hands during an hour and a half each morning. His custom was to get up at six o'clock and work at his garden until half-past seven.

This gave him ample time to dress, get breakfast, and be at his desk in the city by nine. The labor of merely digging was (to him) heavy and rather monotonous, but he stuck to it bravely, and when he again presented himself before me for plants and seeds and information as to what to do with them, it was with some pride that I saw my prescription had worked so well, for my friend then looked more like a farmer than a pallid clerk.

During his first season, of course, he made some blunders and some failures, but his interest in the work increased year by year. His family was supplied with an abundance of all the fresh vegetables and fruits his limited space could admit of being grown—a supply that it would have taken at least \$150 to purchase at retail, and stale at that. But the benefit derived from the cultivation of this cottage garden was health—strong, rugged health—that for the six years he was my neighbor, never once failed him.

I know this case is an extremely exceptional one, for I never knew another man who so resolutely worked himself into health. There are hundreds of business men, book-keepers, salesmen, clerks, and the like who live in the suburbs of all great cities, many of whom can ill afford to pay for the keeping of the plots surrounding their cottages, but who think they can far less afford to do the work themselves. As a consequence, in nine cases out of ten, the rear, at least, of their suburban plots is a wilderness of weeds. But this is not the least of the evils; the owner has a certain amount of muscular force, and this, be it more or less, being unused, its possessor pays the penalty of his laziness in dyspepsia, and a host of other ills. The proofs are apparent everywhere, that garden operations are conducive to health and longevity. The work is not unduly laborious, and when fairly entered into has a never-failing interest. The growing and the watching of the great variety of plants gives a healthy tone to the mind, while the physical labor demanded by cultivation takes care of the body.

Now, then, as we have disposed of all objections that might arise from a moral view of the matter, let us consider it in a pecuniary point of view. Will you be likely to get your money back? Well, I want to say right squarely, here, I do not want to take the responsibility in regard to this part of the business. If you have a natural liking for plants, dirt, sunshine, and rain, and selling things to your neighbors after you have raised them, I do not believe there will be any probability of failure. If you go at the business as I went at the wood to make a monument, you will succeed; and if you go at it because you love God and your fellow-man, you will *surely* succeed; for God himself has promised you success. Seek first the kingdom of God, and his righteousness, and he will add all things needful.

CHAPTER III.

And God said, Let there be light; and there was light.—GEN. 1:3.

If you are going to grow plants for winter, when they will bring high prices, they must be protected against the weather. Heat must be secured. It is true, that heat and light come closely together; and where we get them from the sun, we get them both at once; but for all that, we will take up the subject of heat first. Let us put it in large letters—

HEAT.

There are several means of securing heat for our operations. First, we have heat from the sun; then we have heat from old Mother Earth, and artificial heat by burning coal and wood. Artificial heat may be still further subdivided into heat from hot-air flues, heat from hot-water pipes, and heat from steam. Then there is another kind of artificial heat from the decomposition of certain substances without combustion, such as heat from fermenting manure, although the last is now seldom used, I believe. Let us take up first,—

HEAT FROM THE SUN.

There has always been something wonderfully fascinating to me about the heat of the sun. I hardly need tell you that scientists decide that the heat from the sun is the source of all force. The health-giving properties of the sun's rays have been for ages mentioned and made use of. In visiting the great sanitarium at Battle Creek, Mich., I was very much interested in visiting some rooms clear up in the attic, where they put diseased patients, close up to the glass sash placed in the roof, much like the roof of a greenhouse. They lie here on their beds, partially uncovered, where they can receive the benefit of the sun's rays. Neither plants nor animals can amount to very much without the direct benefit of the sun. In our operations we want all the sun we can get. If we can not do any better, let us use our windows, instead of having the warmth of the sun shut out by curtains and other artificial devices. The windows of any room where people live will do to commence plant-raising on a small scale. When you get all the windows occupied, and have succeeded in utilizing every available inch of sunshine, you will find a way to get more, I am sure. "Where there is a will, there is a way."

Probably your next step will be a few frames of sash, such as are used for green-houses. We shall have more to say in regard to these further on. These frames of sash that are so useful in raising early vegetables are just what we need for raising early chickens, and for getting eggs in the winter time. Of course, it does not do to keep poultry too warm, any more than it answers to keep plants too warm; but we propose to start out intelligently, and avoid *baking* or *roasting* any thing, plant or animal. *Too much* heat can be utilized, just as well as you can make use of a surplus of any thing else. When we have secured all the sunshine we can, by the way of some sash, or a little greenhouse, then we want to husband it by cutting off the cold winds, which will quickly rob us of our acquisition, if we do not take proper precautions. A fence for a wind-break, such as I spoke of a little while back, is what we want. A great many times you can make use of natural wind-breaks. In a town or city you can often choose a location where the prevailing winds are cut off from the north and west. We want to cut off the wind, but let in the sun, so that our wind-break on the east and west must not be too high, or we shall lose as well as gain. Where you have ample wind-breaks, lettuce and a good many other hardy vegetables may be raised by proper precautions, without any sash at all. A shed, closed on three sides and open at the south, such as farmers often use for their stock, is an excellent thing, only we must look out about the covering overhead, or it will take off the light so as to make the plants grow spindling.

One cold wintry day I happened to go off into a piece of dense woods, where a neighbor was chopping wood. The trees were so high, and the woods were so dense, that in the little spot of clearing where he was at work there was no wind at all. The sap was running, and the bees were buzzing about. I thought the weather had changed, and wondered that it had so suddenly become so much warmer. After I got out of the woods again, however, I found that the weather was not warmer at all. It was simply the effect of those great forest-trees in breaking the force of the wind. Ever since

that I have been wishing I could have an apiary located in just such a spot. In hilly and mountainous countries they frequently choose such sheltered spots for early gardens. May be you know of such a place. If so, accept it as a gift from God, and go to work and be happy.

Some years ago I had a little greenhouse built partly under ground, for some experiments for making bees rear brood in the winter time. The east, west, and north walls, and the north half of the roof, were protected by layers of dry earth, nearly a foot in thickness. Over this dry earth a shingle roof was placed, to keep the building from getting damp. The whole south side, and the south slope of the roof, was of glass. The sun alone warmed up this structure so that I could work there in comfort with my coat off, while it was freezing weather outside. Ever since that experiment I have wondered why people do not have rooms in their dwellings, warmed by the heat of the sun, thus saving quite a bill for fuel, and dispensing with the care of stoves, during at least a great part of every winter. What a grand place such a room would make for a playroom for the children!

HEAT FROM THE EARTH.

Greenhouses are usually built partly under ground, in order to secure the benefit of the heat from the earth. In Mammoth Cave we have an even temperature of about 55°. This temperature will answer very well for raising lettuce and radishes, providing you can get light, without frost. The difficulty, however, comes in here; you must have light on all sides of the plants, and they must be tolerably near to the glass, or they will grow spindling and one-sided. If we were sure the sun would shine every day all winter, we could make a greenhouse (or cold frame, rather) that would answer nicely, by simply utilizing the heat from the earth and the heat from the sun. It happens, however, that the sun does not shine more than perhaps one day in four, on an average, during the winter months; and although we have the walls never so well protected, if we happen to have zero weather during cloudy days, the frost will come through the glass sash prepared to let in the sun's rays, however tight the joints may be. We then should have our garden all frozen up—at least, that portion of it that lies very near to the glass, without some kind of heat to reinforce the heat from the earth. Two thicknesses of glass have been suggested and tried, with an air-space between the two sashes; but as

quite a portion of the heat of the sun is lost in passing through even *one* thickness of window glass, we lose considerably more where it passes through *two* thicknesses. A still further objection is, that the outer glass would be covered with frost, which might remain days or weeks, thus cutting off light as well as heat; whereas, with only one thickness of glass, the heat of the interior of the house quickly melts off the icy covering, with the assistance of the sun from the outside. There is another way of managing without any artificial heat, so that hardy plants will not be killed; and this is, to have a good-sized cellar adjoining the greenhouse, so that a free communication of air can be easily opened between the cellar and the greenhouse. The large body of air in the cellar will be considerably cooled off during a cold night; but in its turn it will warm up the body of air in the greenhouse, so that the whole will keep above a freezing temperature. As soon as the sun comes up in the morning, however, this communication with the cellar must be cut off, or the sun will have but little effect on so large a body of air.* All things considered, however, a little artificial heat during the severest portion of winter is thought to be the simplest and easiest; but as it is a very easy matter to injure the plants by too much heat by a little carelessness, an arrangement of pipes for carrying hot water seems to be by far the most practicable method. Steam has recently been made to answer very well; but, like the heat of the stove, or a flue, since it is so liable to get things too hot, the hot water seems to be safer.

We would make the greenhouse as much under ground as we possibly could, and still get light enough so that the plants should not grow "long-legged" nor one-sided. The sun's rays coming through the glass would warm up the walls and floor during the day, and these same walls and floor would hold heat enough to keep the plants from suffering until the sun's rays could cause a reinforcement the next day; and many plants would grow better this way than with the aid of artificial heat. Such structures can be used in places far enough south so that the temperature is never quite down to zero; and they are also used in our own latitude after the severer portion of winter is past, say during March and April. They are called "cold frames." They are also used for wintering over such hardy plants as lettuce,

* An open tank or cistern of water will answer the same purpose as a body of air, to a certain extent.

cabbage, etc., by lifting the sash so as to give air when the weather permits, and covering the plants when the weather is severely cold; for it is well known, that the class of plants mentioned will stand even 15 or 20° below zero (covered with sash) if they are properly cared for, or gradually accustomed to the cold. Such structures are also quite valuable for poultry. I believe, however, the best authorities on poultry rather discourage the use of artificial heat.

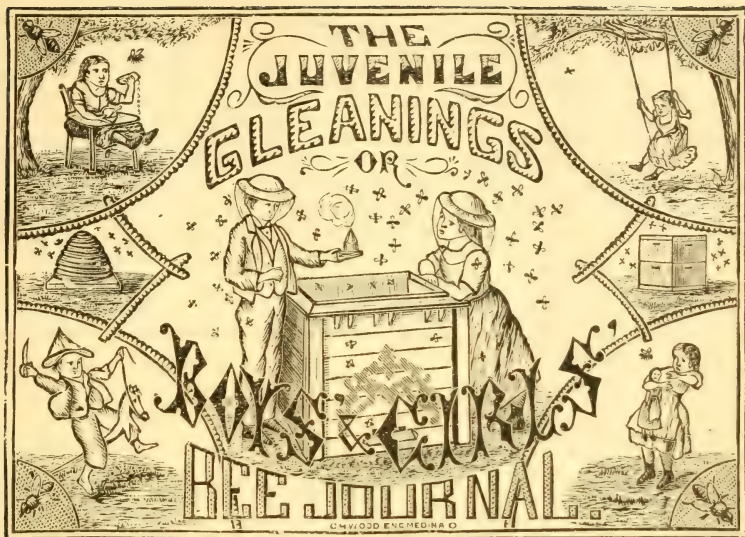
In connection with heat from the earth, it may be well to speak of what has been called "sub-earth ventilation." Of course, our greenhouses, poultry-houses, or buildings for any other purpose, kept warm during the winter time, must have constant accessions of fresh air. Well, *outdoor* air is often at a low temperature, sometimes below zero; and this air must be warmed up by some means, else it will lower the temperature of our inclosure. If we warm it up by means of hot-water pipes or steam-pipes, it takes quite an amount of fuel, besides the labor of keeping fires. Well, instead of having a large cellar to warm our body of surplus air to the proper temperature, we may have a pipe, or series of pipes, running some distance under ground, below the point where the frost reaches; and the cold air, taken, say, from out in the fields, at a *zero* temperature, becomes warmed up to 55°, the natural temperature of the earth, in its passage through these pipes, providing the pipes are not too large in diameter, and are sufficiently long. Usually some arrangement has to be made to make the air travel in the right direction; and sometimes a sort of chimney a few feet high is put up at the inlet, and this chimney is surmounted by a sort of funnel, or hood, which is kept facing the wind by means of a vane. This starts a current in the pipe; and the cellar or greenhouse where this stream of air at 55° empties has an outlet near the roof, to let the warm air escape. I may say, however, that, in practice, during *zero* weather the air usually escapes fast enough, without any provision for an outlet. The size and length of these sub-earth pipes depend a good deal on circumstances. Some authorities recommend that they be laid at least eight feet under ground, and run a distance of 200 feet; but as such an arrangement would be quite expensive, many of our bee-

friends have had very good results by laying a line of common underdraining tile, say three feet deep, and only fifty or sixty feet in length, the tile to be three or four inches in diameter. While this might not raise the temperature of the air during zero weather to fully 55°, it would probably raise it considerably above the freezing-point. Some experiments are needed in this matter.

In passing out and in Mammoth Cave during a frosty, wintry night, we began to find that the stream of incoming air felt chilly when we were perhaps an eighth of a mile from the mouth of the cave. In this case, however, the stream of air was very large, and at the door of the cave it blew almost a gale. Sending a stream of cold air down into a well by means of a pipe, and then collecting it at the mouth by another pipe, would also answer to remove the frost. But if the stream of air passing down is very large, it might have the effect of freezing the water in the well.

Now, where there are large natural springs coming out of the hillside, we may, by a very simple arrangement, bring large quantities of heat from the earth, and utilize it by conducting the spring water back and forth in open pipes until it has parted with the heat it contains, until its temperature of 55° is reduced nearly to the freezing-point. By having these channels protected by a sash we can combine the heat of the earth and the heat of the sun so as to make an excellent cold frame for hardy plants, without the use of artificial heat. The spring water may be passed back and forth under the beds. The heat it gives off will operate in the same way as the heat from hot-water pipes; only we shall never be able to get above 55° without the aid of the sun. This spring water would be just the thing for watering the plants, and such an arrangement can be made very pleasing to the eye, as well as profitable to the pocket. A little fountain, or several of them, if made so as to throw a small spray, would induce the water to part with its heat still more rapidly than the open channels. One of our most successful bee-men in the State of Michigan has a spring in the cellar, or cave, where he winters his bees. The water from this spring, flowing through this room, is found a check to keep the temperature from running too low.

To be continued Dec. 15.



He that is faithful in that which is least, is faithful also in much.—LUKE 16: 10.

MYSELF AND MY NEIGHBORS.

For where two or three are gathered together in my name, there am I in the midst of them.—MATT. 18: 20.

I SUPPOSE, friends, that even the juveniles have heard this little text just above what I am writing, over and over again, especially if they ever went to a prayer-meeting where only a few were present. The above text, or the substance of it, would come somewhere in the first prayer. Well, now, it is a grand little text; but it is the five verses that go before it that I shall have to do with now. The first of these five verses reads like this:

Moreover if thy brother shall trespass against thee, go and tell him his fault between thee and him alone; if he shall hear thee thou hast gained thy brother.

Perhaps you would like to know what brought this to mind. Well, it was like this: One of my neighbors, whom I will call Mr. A, came to me, saying he could not get along with neighbor B, any way possible; that it was no use trying any more.

"My dear friend," said I, "you know you had trouble with neighbor C, not very long ago, and thought you could not get along with him possibly. Now, whenever I get to feeling that way (and I often do, I own up). I always begin to feel a little uneasy for fear the trouble is with *myself* and not with my neighbors."

"Mr. Root, I have thought of that, and I suppose I am ugly enough myself; but I have got all over my trouble with neighbor C, and I can get along with almost anybody now, except neighbor B."

"But, my dear friend, do you remember that you and neighbor B are both members of the same church—both followers of Christ—or, at least, profess to be?"

"Yes, I know all that; but I have tried and tried, and I don't believe it is of any use to try any more."

"Well, if *that* is the case, there is a plain remedy in the Bible. Have you tried that plan?"

"No, I have not tried that plan. The fact is, I am too ugly myself. I know what is the best way, and the right way; but it is not in me. I have not the gift of saying what ought to be said, in the way in which I know a Christian ought to do these things."

"I thought a minute, and finally said, 'Would you like that I should speak to neighbor B about these matters?'"

"Yes, Mr. Root, I really wish you would. There is not any use for me to talk any more."

"Come to think of it," said I, "I rather think the better way would be for me to talk with you both together."

This plan did not suit him so well, but he finally assented, and conscience commenced her work, as I knew pretty well she would; for I knew that this neighbor, whom I have called A, for illustration, was trying, and trying pretty hard, for one of his temperament, to follow Christ. He has his own notions, and very strong likes and dislikes, and quite a temper to keep the upper hand of, with all the rest. In the course of an hour or two I was not surprised to see him come around with a pleasanter look upon his face; and

with eyes somewhat downcast, he said, in a kindly tone of voice:

"Mr. Root, if you will be so kind, I guess you need not do anything about what we were talking of. May be I can do a little better, and I am going to try hard."

I wonder how many there are whose hearts will be touched by this little story of everyday life. How many are there of you, my friends, who know what you ought to do, and who have felt in your inmost heart that you hadn't the right spirit to do it? Those who are older in the Christian work would perhaps have said, "I have not grace enough." What, then, is grace? Is it not the influences of God's Holy Spirit—meekness, love, charity, long suffering, and all these other things—the fruits of the Spirit, if you choose? Oh how often I have been compelled to pray, almost in real anguish of heart, "Help me, dear Savior, and give me that spirit of gentleness, kindness, meekness, and love!"

I told you there were five verses that I had in mind; but I have as yet said nothing of more than one of them. The second verse says, that if this spirit of meekness and love does not answer the purpose, we shall take some other brother, or a couple of them, with us; and here is this wonderful plan of arbitration mapped out—the plan that has of late been used to prevent fierce wars between great nations. What a grand and what a wonderful truth is there in these simple little words of Christ the Savior! My experience has been, however, that among neighbors (and it is of neighbors we are talking) there is seldom any need of any third party at all. If you do your part, your neighbor will be almost sure to do his part. It takes two to make a quarrel; and where even one of the two shows a Christian-like spirit (and this does not mean that you are by any means to allow yourself to be run over, for a Christian must be brave as well as kind), my experience has been that the quarrel ends. I suspect that the trouble between these two neighbors, A and B, was, that Satan's spirit, instead of Christ's, had got between them. They were both at fault, no doubt, and I fear both had forgotten the teachings of the Bible, especially the five verses I have been speaking of.

The third of my five verses directs that the complaint shall be brought before the church, and that the church shall deal with both parties, if need be. If either one refuses to submit to the church, of course he must reject Christ and Christ's teachings; and in that case there would be little hope for him. He must be treated as a heathen, or one who rejects Christ, and one who rejects Christianity.

The fourth verse tells us that these things that are settled here on earth are settled for all time to come; that these little acts and quarrels go on to eternity, and even reach as far as heaven and hell.

The last of the verses considers the attitude of, and what may be accomplished by, two Christians working in harmony and brotherly love. If even two of us agree in any petition to our heavenly Father, Christ says that our Father in heaven will grant it.

Of course, we are to understand that this verse refers to two brothers in Christ. So greatly is God pleased to see us doing our work in brotherly love, and with Christ's spirit uniting us, that he has promised what we ask in his name. And then follows the little text that I started out with. Where even two or three of us are gathered together in the name of Christ, there will he be in the midst of us. And, dear friends, is not this little verse at the root and foundation of the church of God? Is it not the germ and seed from which any church must spring up, with Christ as a center? Let us read this little text together again; and as we read it, let us see if it will apply to *ourselves* and our *neighbors*.

For where two or three are gathered together in my name, there am I in the midst of them.

HOW A BEE CLINGS TO GLASS.

A TALK TO THE JUVENILES; ALSO SOMETHING FROM MR. LANGSTROTH.

AS I promised, I will now give the juveniles a talk on a bee's foot, and what it can do. If you will give me your attention for a little while I will try to make it clear to you how a bee clings to a piece of glass, and doesn't fall. Did you ever think how a fly can walk up a window-pane, and not slip?

Below is a drawing of a bee's foot, exactly as it appeared in my microscope. It is 40 times as long and 40 times as wide as the natural foot. D, D, are the two notched claws which the bee uses in clinging to wood and other substances which the bee can stick his foot into. Did you ever have a bee plant his little feet right into your flesh when he was getting a good hold so as to sting? These little claws are what hurt, and are almost as hard as your jack-knife. They do not always hold this position as seen in the picture, but they can close up like your thumb and finger, or can turn themselves clear around like the letter Y.

"How does the bee cling to a piece of glass?" I suspect you are beginning to ask. Just listen. There is a little film as at C, that looks a little like the head of a hatchet, or, perhaps, more like a fan. B is a pair of arms that keep this little disk, or fan, spread out on the piece of glass. A is a little muscle that looks like a potato-masher. The little end is fastened to the little fan-like film, and the other connects the end of the foot between the claws.



A BEE'S FOOT.

Perhaps this is a little hard for you to understand. If you will wait a moment I will tell you how to make something just like this little arrangement upon a bee's foot. Did you ever notice, when you were washing your hands in soap and water, how your hands will cling together by the force of suc-

tion? You must rub your hands closely together, and then, drawing them gently apart, you will notice how they adhere. If your little baby-brother were to wet his little fat chubby hand and press it flatly upon a pane of glass, then by drawing up his knuckles his hand would probably cling to the glass, providing you could get him to do it rightly.

An older person's hand would not do, as it is not flexible enough. One more illustration, and I will return to the bee's foot.

Procure a circular piece of leather, about two inches across (get your papa to help you), and through the center pass a string, tying the end in a knot. Now draw the knot close to the leather, and be sure that the hole in the center of the string will just admit the string. Next, thoroughly soak the piece of leather, then upon some smooth surface, as a flat stone, stamp the leather flat upon its surface, being sure that there is no chance for air to get under the leather. Now gently draw the string with your hand. This will raise the central portion of the leather, and cause suction under its surface. You will now find that you can lift a stone of several pounds' weight, if all has been done rightly.

This is precisely the way that a bee clings to glass and other smooth surfaces. Returning once more to the engraving, the little fan-like arrangement, C, answers the purpose of the leather. B is a pair of arms that spread out the little disk flat upon the glass. The little muscle, A, answers the purpose of the cord. Now, when the bee wishes to cling to glass he secretes a liquid (which has the same purpose as the soap upon the hands) under this little fan-like surface; he next spreads out this little fan with the muscles at B; then pulling the little muscle, A, he lifts up the center of this little disk. There! don't you see we have something about like the boy's stone-lifter? This produces what is sometimes called *suction*; and the whole apparatus is termed a *sucker*.

To illustrate to the "wee" folks what suction is, take an empty bottle, and draw out a part of the air with your mouth. You will find, after having done so, that your tongue will be drawn into the bottle. This is what draws a bee's foot to a pane of glass.

There, now, boys and girls, have I made it plain? I purposely dwelt upon details, so that our little friends might understand.

Perhaps I should add, for the benefit of the older ones, that there is something at E, which might answer for a valve, and that, when it opens, it allows the air to enter C, and thus free the bee. Or, it may be a gland for the secretion of the fluid that I referred to in the above. But these are only conjectures, and I have not been able to prove either.

ERNEST R. ROOT.

P. S.—I have just received a little note from father Langstroth, by way of encouragement in my microscopical work. Among other things we are glad to learn that he is feeling better. His letter is below:

E. R. R.

Dear Ernest:—I am very much pleased with your admirable drawing of the joint of the bee's leg, and the remarks accompanying it. I should judge that you have a very decided aptitude for such nice work, and there is a wide field open to you.

I hope to meet your father at the Detroit convention. I have been threatened with another attack of my old head trouble, but am better now than for

some weeks, and I hope to send the conclusion of "Observations on Drones" in season for the 15th. Oxford, O., Nov. 6, 1885. L. L. LANGSTROTH.

KIND WORDS FOR ERNEST.

BEING "EARNEST" FOR THE SAVIOR.

MR. ROOT:—I mean Mr. E. R., not Mr. A. I., this time, although I have addressed my envelope to the latter. Well, Mr. E. R., I have just finished reading your hints to the juveniles, on letter-writing, so I will not offend your royal highness by commencing my letter thus: "My pa keeps bees, and has a cow and a calf," and so on, to the end of the list; though my "pa" has the good fortune of possessing the "busy little workers," and also said "cow." Well, now, my real motive in writing this letter is this: When we received GLEANINGS for the 15th of Sept., my little blue-eyed baby-sister was eager to have the juvenile department read to her. When she found that you were to have control of that department, instead of your father, she exclaimed, "Oh dear me! I just know Ernest" (for I am forced to say, that when we speak of you in our family circle we use your name, without the prefix Mr.), "will be more exacting than Mr. Root." She continued to talk of it until we received GLEANINGS for Oct. 15. After hearing your kind words to the juveniles read, she laughed heartily, and said, "Well, I declare! Ernest is a real funny boy. I think I shall like him hugely. I am going to try his plan, in regard to that bee." She was so enthusiastic that she went right out in the apiary, and secured a bee; but, there—I must not tell the result, for she is going to write and tell you all about it, and it would not be fair for me to take advantage of her, and tell it.

Friend Ernest, I trust that God will bless you in your efforts to aid your kind father. God bless him. His name is always mentioned with love in this household. I am sure you will win the hearts of the dear little ones. As I am a little over 15, I shall not expect a book; besides, I do not think my letter contains much information; but if you think my little note worthy of publication, put it in the juvenile department. Don't fail to give us that talk on a bee's leg.

ETTIE.

Church Hill, Miss., Oct. 24, 1885.

Ernest's reply:

When the paternal "A. I." handed the above to "E. R." the younger, with a half playful, half serious remark, "Now see what you have got to take," and still further, when the aspiring sonship read the fore part of the letter, the title of "Royal Highness" began to wax sore heavy, and he repented that he had not kept out of the said corner, where he was likely to be cornered up—that corner where his "pa" was wont to stand. On reading further the youth's spirits began to revive, and he seemed like his former self.

Yes, friend Ettie, to be truly "Ernest" for the Savior is the highest title I care to attain; and may God help me to be a constant aid to that father who has been too long overburdened with cares.—Thanks for your kind words. We shall be most happy to receive the results of the blue-eyed sister's experiments. The talk on a bee's leg will appear in another column.



Every boy or girl, under 15 years of age, who writes letter for this department, CONTAINING SOME VALUABLE FACT, NOT GENERALLY KNOWN, ON BEES OR OTHER MATTERS, will receive one of David Cook's excellent five-cent Sunday-school books. Many of these books contain the same matter that you find in Sunday-school books costing from \$1.00 to \$1.50. If you have had one or more books, give us the names that we may not send the same twice. We have now in stock six different books, as follows: viz.: *Sheer Off, The Giant-Killer, The Roby Family, Rescued from Egypt, and Ten Nights in a Bar-Room.* We have also our *Homes, Part I and Part II.* Besides the above books, you may have a photograph of our old house apia, taken a great many years ago. In it is a picture of myself, Blue Eyes, and Caddy, and a glimpse of Ernest. We have also some pretty little colored pictures of birds, fruits, flowers, etc., suitable for framing. You can have your choice of any one of these pictures or books for every letter that gives us some valuable piece of information.

"A chiel's amang ye takin' notes;
An' faith, he'll prent it."

I AM glad to say that you little folks are going to help me out in the problems which I presented last month. However, it is a little late in the year for very many of you to report; but perhaps you can remember something in your experience that will give us a little light. I don't want you to give it up, as you are just the ones to tell us about it. Some of the big folks haven't the time or patience to work these things out.

I propose to give you another problem which you can answer for yourselves the present month. It is nothing of very great importance, but it will help you to be observing. Suppose you find out how a bee walks over the combs; that is, what portion of his leg does he use? Does he walk on the extreme end of his foot, or what part does he use? It probably will not be convenient, at this time of the year, to see just how they walk over the comb itself; but I will tell you a way that will answer just as well. Cage a few bees in a queen-cage, then with a magnifying-glass, or even with your eyes alone, notice how they walk over the meshes of the wire cloth. The meshes will answer for the comb. It is real funny to watch their little feet trip lightly over the wire. Sometimes you surely think they will make a mistake and fall off, so rapid are their movements. You must look sharp, or you will not see how they do it. While a bee is standing still, see what a funny little foot he has. Next, cage a few bees in a small box with a glass top. Then you can see how their little suckers cling to the glass as they walk on it. In another column I am going to tell you more about this tiny little foot, and I want you to see if I am right, because may be I might make a mistake.

We also want reports of how your papas' bees did this season. How much honey did

they bring in, and how many swarms go into winter quarters? Are they outdoors, or are they in winter hives on the summer stands? Some of your papas are big beemen, but they are one of those kind of quiet sort of men who don't write much. You are just the ones to tell us. How many of you shall we hear from next month?

Perhaps you would like to know about our baby-rabbits. Little sister Caddie has kindly consented to tell you, and her letter is below.

HUBER'S BROTHER.

THE FRADENBURG RABBITS; A REPORT OF, BY
CADDIE—ANOTHER BLUE EYES.

We had thirteen or fourteen little rabbits, but an old cat killed all but three, and Blue Eyes and Ernie have to shut them up every night, or the cat would get them too. We know it is a cat, because pa saw a cat in there one morning. These rabbits are about a month old now, and we have some more only two or three days old. Blue Eyes saw those before they had any fur on, and she said that they looked like baby-robins. Those that are a month old are the prettiest, because they have their eyes open, and can run around. Two of the month-old ones are a creamy yellow, and the other is gray. It is hard to tell what color the youngest ones are, because they haven't much fur yet.

Medina, Ohio, Nov. 7, 1885. CADDIE ROOT, age 7.

A LITTLE VILLAGE.

We have two swarms of bees. My papa sent and got one of your smokers, and he thinks it is real nice. Uncle Andrew has lots of bees; and when you look at the hives it seems like a little village. The bees like to suck the honey out of the flowers in my little garden.

MARY EDNO JENSEN.

Saxeville, Waushara Co., Wis., Oct. 13, 1885.

AN INCUBATOR FOR HATCHING QUEEN-CELLS.

I am a little boy 12 years old. My father has a hot-water incubator for hatching eggs. The temperature for hatching is 102° to 104°. Can I hatch queen-cells at that heat?

J. BAKER SMYLIE.

Caseyville, Miss.

A temperature of over 100° is rather too hot for hatching queen-cells. Between 90 and 100° is about right. See A B C.

BUCKWHEAT INJURED BY FROST.

My brother has four colonies of bees. They did well for this year. They are doing pretty well on the buckwheat. The frost has killed the buckwheat considerably. We have about 200 Simpson honey-plants, and about 150 spider plants. I like to work with bees real well. Pa made two artificial swarms this year; he did well with them, only they did not want to accept the queen at first.

Woodstock, O.

PERL Z. CRANSTON, age 13.

GETTING STUNG IN THE DARK.

My pa has no bees, but we live close to grandpa, and one of my uncles has got 40 stands of bees. Sometimes I go to help him fill up honey-bottles. One night I was down in the cellar with him. He went to get something to put honey in, and left me in the dark. While he was out, a bee stung me on my neck. Uncle Henry told me to be still; but when the bee stung me I ran up the steps crying. Uncle laughed at me.

VIRGIL PATTERSON, age 9.

Humboldt, Neb., Oct. 19, 1885.

NOT MUCH BUCKWHEAT HONEY, BUT "A GOOD BIT OF BASSWOOD."

My pa has ten swarms of bees. I claim one of them. They swarmed twice this summer. It was bad weather in August, and we didn't get much buckwheat honey, but we got a good bit of basswood.

EMMA DATERRER.

Newtown Mills, Pa, October 5, 1885.

50 GALLONS OF HONEY FROM 22 BOX "GUMS."

I am a little girl 8 years old, and I live on Red River. My pa is a farmer, and he is a beginner with bees. He has 22 hives, and they are old box gums. He got 50 gallons of honey last year. My sister lives about 200 yards from me. She has some bees too, and her bees came down here to rob pa's bees, and pa's killed them just as fast as they went into the gum.

LIZZIE DUDNEY.

Collinsburg, Bossier Parish, La.

FROM 41 TO 70, AND 3000 LBS. OF HONEY; REPORTED BY A JUVENILE.

My papa has kept bees about six years. He commenced this season with 41 stands; increased to 70, and got 3000 lbs. of comb honey in 1-lb. boxes. He sold some at home for 15 cts. per lb., but sent the most of it to New York. I have one brother. His name is Royal Jasper. We go to school. I have left off at the head of my spelling-class every day for two weeks.

EVA GREGG, age 6.

Galilee, Wayne Co., Pa., Oct. 22, 1885.

HOW A LITTLE GIRL MAKES HERSELF USEFUL.

My papa has 25 colonies now. They didn't swarm any this year, but made a good deal of honey. Papa generally takes from 100 to 200 lbs. of honey per year. I help him with his bees. I could climb a ladder, saw off the limb, take down the bees, and hive them before I was 10 years old. Pa buys all his hives of you. He and I are coming out to see you and your bees and little Blue Eyes.

MARY C. MILLER.

Millersburgh, Ky., Oct. 14, 1885.

We are very glad to know, Mary, that you are going to pay us a visit. When you come, be sure to tell us that you are the little girl who said in the Juvenile journal she was coming with her father to pay us a visit.

"A BIG FLY BIT HIM."

Papa has 15 swarms of bees; he commenced with 9 swarms. He would have had 21 swarms, but 6 went away. I had a wart on my hand, and I put coal oil on it twice, and it took it off. I have a little brother 3 years old. One day he went out to play. Pretty soon he came in crying, and said that a big fly bit him. A bee had stung him.

Jefferson, O.

JESSIE HERRICK, age 10.

Very good, Jessie; but how could you prove it was the coal oil that made the wart go off from your hand? Warts come and go, quite frequently when nothing is put on, do they not? You may be right; but I am anxious that you children shall learn to use reason, especially in this matter of remedies for various ailments.

REPORT DISCOURAGING.

The bees have not done much this season, and have not made much honey; but next year I hope they will do better. Papa has taken the honey from our bees, and now they are full of honey for the winter, so papa will not have to feed them. The

other morning George and I went out and got 43 fish, and they were just as fat as they could be, and we smoked them.

EVA S. GLAWSON.

Hawk's Park, Fla., Sept. 28, 1885.

Glad to hear about the fish, Eva. But, what do you mean by "smoking" them? That is something we don't quite understand here. May be you can tell us about it.

A LESSON TO BE LEARNED FROM THE BUSY BEE.

Our neighbor keeps bees, and I have been over there to see the bees swarm in a hot summer's day. It is a good lesson for little children to go into a beeyard and see the busy bees work in a sunshiny day. It is a perfect buzz all the day long, by the busy bees going forth to find honey-flowers, and bringing back to their hives particles of nectar which is made into honey in the comb; and when the cell is filled by the bees they cap the cell over with a piece of honey-comb, then it is finished.

Tracy Creek, N. Y.

BERT S. WHITTAKER.

50 SWARMS AND 2000 LBS. OF HONEY; SOMETHING ABOUT CARP.

My papa has about 50 swarms of bees this year. They are getting along all right. This summer my papa took off about 2000 pounds of honey. He keeps carp. One day he went to his carp-pond and caught a carp and brought it to the house and showed it to my little brother Irving, and he thought it was nice, and he laughed. He is $2\frac{1}{2}$ years old.

EMMA JENSEN, age 11.

Valparaiso, Nebraska, Oct. 17, 1885.

Why didn't your papa weigh the fish, and tell how much it weighed, Emma, and how old it was? We all want to know what can be done in this matter of carp. We should also be very glad of a report from those who are using the carp for food. Are they really good?

FOOT-POWER SAWS NOT PRACTICABLE.

Papa and I have been keeping bees for about four years, and have been following your advice. We did not have much success with the old-fashioned way, but are doing better now. Last winter we made a foot-power saw for making hives, but it was such hard work sawing that we attached a horse-power and made 12 nice hives. I would not advise any one to attempt making many hives by foot-power. Two years ago we had only three colonies, and now but 16. My colonies were very weak last spring, but papa gave me some combs containing eggs and young bees, with which I made it a strong colony.

CHARLIE GREER, age 11.

Paris, Tenn.

A JUVENILE TELLS HOW LONG A BEE LIVED AFTER IT STUNG HER.

I am a constant reader of your journal. My pa takes it. He has five hives of bees. It was said in GLEANINGS that some one should try to find out how long a bee would live after it lost its sting. I tried it. It stung me in my dress, and it left the sting in the cloth. I gave it all the honey that it wanted, and it lived just seven hours.

HULDA M. MYERS, age 13.

Mt. Cory, Hancock Co., O.

Well done, little friend. You have indeed given us something valuable. You may now, in addition to the book we sent, take your pick of any thing on the ten-cent counter. Let us hear from other juveniles upon

this point; and if they do as well, we shall be glad to grant them the same privilege.

HOW WILLIE STARTS INTO THE BEE BUSINESS AGAIN.

My pa has 68 colonies. I had a swarm, but the other bees robbed them this summer, and they died. Mr. Dukes found a bee-tree this summer. Pa helped chop the tree and fit the bees up for him, but it was too late for them to gather enough honey for them to live through the winter without feeding, so he told pa if he would come and get them he might have them. So we went and got them, and then pa gave them to my brother and me. You see, Mr. Root, by this letter we are going to try the bee business again.

WILLIE BOLTON, age 10.

Stanley, Ohio.

DOWN IN SUNNY FLORIDA, WHERE ORANGES GROW.

We have no bees. I should like to get one or two hives of bees, so we should not have to buy honey. The orange-trees are white with blossoms. The bees get plenty of honey from the blossoms. I am going to school now. I like it very well. I have learned a great deal. I wish it were about four months longer. It is about the only chance I shall have to go. We have plenty of fish and oysters. A few weeks ago I saw Mr. Muth pass our house. I was very glad to see him.

Hawk's Park, Fla.

GEORGE F. GLAWSON.

Do you really mean, George, that it was our friend C. F. Muth, of Cincinnati, whom you saw? I didn't know before that he was visiting in Florida. We wish he would write to us some letters, and tell us about his trip.

A JUVENILE TELLS HOW TO MAKE A HOME-MADE EXTRACTOR; HOW TO HATCH A QUEEN-CELL IN A HEN'S-EGG SHELL.

My brother has 21 swarms of bees; they have done well this summer. I do not know how much honey they made. My brother made an extractor. He took a bucket and put a stick across it. Then he took a piece of sieve and put it on a square wooden frame, and fastened two of these frames to a round iron running up through the center of the bucket, and through the stick on top. He then put a wheel on the end of it, and a crank to turn it round with. One day I had a queen-cell in my hand, and the queen came out of it. We hatched a queen under a hen, in an egg-shell.

KATIE BRIGGS.

Deposit, N. Y.

I think, Katie, your brother must have had a pretty large bucket; that is, if his extractor will take frames of the ordinary size.

A LITTLE GIRL WHO LIVES NEIGHBOR TO FRIEND W. S. HART.

I thought I would write you a few lines. I got the books that you sent me. They are nice books to read. The little book has some pretty stories in it. Mr. Hart is our friend. He has a nice lot of bees. He gets a good price, but he has nice honey, I think. Papa used to keep a few hives of bees, but he does not keep any now. I will send you some orange-blossoms.

MINNIE MENDEL.

New Smyrna, Fla.

Thank you for your promise of orange-blossoms, Minnie. We should be real glad if you would give us a good long letter, telling us more about Mr. Hart's apiary, and what he is doing. We would willingly pay

you for such a letter. And, by the way, the little boys and girls who live near bee-keepers could do us quite a service by visiting them and making reports of what they see.

WHAT IS IT?

My grandfather had some potatoes under some straw, with just the least bit of dirt over them, and they do real well; but what I want to tell you is, that in under the straw was something curious. I do not know what to call them. They are about the shape of an egg, a little smaller than a common hen's egg. He found one about two weeks ago, and in three or four days he found three more. They were all rooted together with little fine roots, and he buried them in the ground. He kept one of them to show to folks. In about one week he poured some warm water over them. The next morning both of them were up. He buried the other one then, and poured warm water over it. It came up in a little while. They were about five inches tall, and about half an inch through the bottom, and about a quarter of an inch through the tops. They look like the stem of a toadstool.

My grandfather was 87 years old in September. My brother got an Italian queen, and in 21 days there were young bees in the hive.

Woodstock, O.

PERL Z. CRANSTON, age 13.

From your description, Perl, I should suppose it was a sort of mushroom that your father found. May be it is the mushroom we use for food; but I didn't know before that they could be transplanted as you mention.

A CASE OF ROBBING; A SWARM THAT SMOTHERED FROM BEING CLOSED UP.

We had 8 swarms this summer, but we have only 7 now. Our neighbor has 14 swarms, and we are bothered with them all the while. Pa says they carry the honey out of our hives as fast as our bees can gather it, and he has to feed them for the winter. It was a very warm day on the 28th of September, and the robbers were so strong that pa had to shut our hives, and it was so hot that one of the swarms smothered, and he took the hive and carried it down cellar, for he thought that he could save the bees; but on opening the hive he found almost all the bees were dead, and their combs were all melted down.

KATIE ZEHR, age 10.

Indian River, Lewis Co., N. Y.

Friend Katie, your papa learned a lesson in regard to the danger of shutting bees up when the weather is very warm. It is never safe to fasten bees in, especially when they are excited by robbing, or something of that kind, as yours were, unless they are very closely watched.

A SWARM THAT HUNG ON A LIMB 6 DAYS.

I was up to my Uncle John Noftisier's, and we went out. I saw a swarm of bees hanging on a limb. I asked why they didn't hive them, and they said they hived it twice already and it didn't stay in the hive, and then they looked and saw that it was a swarm that he got in the spring, and had no more honey, and had left the hive. It had been hanging there three days when I was up there, and he said that it stayed there three days more, and then they starved and fell off.

LENA ZEHR, age 12.

Indian River, Lewis Co., N. Y., Oct. 23, 1885.

Why, Lena, wasn't that cruel, to let that

great bunch of bees starve? I am sure I could have hived them so they would stay, especially when they were starving to death where they were. Suppose you had fixed the hive right where they clustered, and then given them some syrup in a feeder; they certainly would have gone to work, and fixed themselves for winter, had you given them such a chance.

HOW CONRAD MADE A HIVE FOR HIMSELF.

My brother Christian had 34 colonies last fall, and he has 25 yet. Several experiments which he tried caused the death of some colonies. I began to keep bees last year. I first took a few old boards and sawed two alike for the ends, then two for the sides. My brother Christian nailed it together and we put the bees in. We took an old top of a hive for the lid, and they did pretty well in it. I dug a hole in the ground so that one end was open for the entrance, then set the hive in, and put sawdust on the ground; then we had no bottom in it. Then I began to feed them with sugar till it was time to quit for winter. I packed them with straw outside and chaff inside. CONRAD E. WECKESSER, age 11.

Marshallville, Ohio.

Well, Conrad, that is a rather novel hive of yours, with nothing but dirt for the bottom. I am not sure but it would answer nicely during warm weather. Of course, there would have to be a ditch dug around the outside of the hive, so the water from storms would not get in and make it nasty and muddy.

A SWARM THAT LEFT THE HIVE, AND BUILT COMB UNDER THE HIVE.

Pa had 7 stands of bees, and they all died but one. I don't know what was the cause, but I guess he did not tend them. I am staying with my sister. They have five stands of bees. Bees here gather honey from white clover, basswood, Spanish needles, smartweed, and goldenrod. I love to read the little letters. Did you ever hear of a swarm of bees that left the hive, and built comb under the hive? Our neighbor had one last winter, but they froze when cold weather set in. IDA M. DEAL, age 13.

Herborn, Ills.

Yes, Ida, I have heard of swarms of bees going under the hive, and building combs, as you say. Sometimes it is because their owner does not give them room enough inside of the hive to store the honey, and in that case it indicates bad management. It is like the old adage of not having your "bowl right side up when it is raining porridge." When the honey-flow comes that induces bees to do all that, we surely want to have plenty of surplus boxes on, so the bees may put it in the hive in the nicest shape. Sometimes it is caused by the queen crawling under the hive instead of inside of the hive, when a swarm is hived. In that case there would be nothing in the hive at all, though I hardly need tell you that this also is very bad management.

FINDING A BEE-TREE IN THE NIGHT.

Since I wrote you last, I do not know what to write about bees. Papa is now putting grapevines between his hives, to shade them in hot summer days. I think it is a good plan, to keep any one from getting the grapes before they are ripe. Papa has found three bee-trees, and I found two. I found

one while hunting one night. I saw something white while I was passing by a large tree, right at the ground, while my dog grabbed out some of the comb; but the bees did not sting him, because they were too cold. Papa and myself went back there the next day and nailed some bark off from another tree of the same kind over the hole, and left only one little hole for the bees to come out. He said that he did this to keep any one else from finding it. He is going to get them in the spring. I like hunting in the night, very much. CHARLIE HARDIN, JR.

Very good, Charlie. I suppose you mean the tree had an opening near the ground. Bees do sometimes occupy such places, but not often, because such a place is too convenient for their many enemies. And so the white comb was partly visible through this hole. Had I been your papa, I think I would have cut the bees out and carried them home, in order to make a sure thing of them.

A NOVEL METHOD OF CREATING A "HOME MARKET," HOW THAT HALF-POUND OF BEES TURNED OUT.

I want to tell Huldah Williams how our mamma manages so as to let us have all of her honey, and sell it too. She sells it to papa. Isn't that a "home market"? In Sept., 1884, she got $\frac{1}{2}$ lb. of bees from you, which were her first bees. In November she took them out of the little hive, and put them in a big one, with chaff cushions on each side, and they got along very well. In warm weather she would go to them; but one day in March she went to them, and they were all stiff, and looked like dead bees. They did not have a drop of honey, so she laid the two frames in the sun, and sprinkled them with sugar-water, and in a few hours they were all alive and in the hive again. She fed them till they could get honey. They did not swarm this summer, but there are many bees in that hive. They filled the bottom of the hive with honey, and then filled the top, and that is the honey we laugh about mamma selling to papa. The honey was crosswise and every way, so mamma could not draw out the frames; so she asked papa to come and lift the top story, honey and all, off, and she put empty frames on. Papa is afraid of bees, so he had on a veil and gloves, which made his hands clumsy; and after all the bees were off, and he was taking the honey to the house, he let it fall, and, such a mash! We got pans quick, and saved the honey. There were young bees in the middle.

What will keep the queen out of the upper story? and how can mamma make them build straight comb? I am always with her when she goes to them, and am not afraid, though they get in my hair sometimes, and sting. In May a swarm of black bees clustered on the hedge, and mamma and I put them in one of your hives, so we have got two hives of bees. Please excuse my long letter. I only wanted to tell H. W. how she could get a plenty of honey, and I have said too much about other things.

PEARL FERGUSON, age 10.

Macon, Miss., Sept. 26, 1885.

Thank you for your good letter, friend Pearl. Your mamma has learned a lesson in regard to the importance of seeing that the bees have plenty of food. Do not by any means let the industrious little fellows starve to death. She chose the proper way to bring them to life. You *did* have a mess when your papa dropped the honey, did you not?

I think you will have no trouble with the queen in the upper story, if you use section boxes according to the modern methods of management. This matter, and that in regard to straight combs, are very fully treated in the A B C book.

TOBACCO COLUMN.

THE TOBACCO REFORM AMONG THE WOMEN.

AS it seems to do you so much good to know that people are stopping the use of tobacco, and I believe I hate the habit as bad as you ever could, I report for my wife and her two sisters, Mary and Nancy Israel, who have used it for the last ten or fifteen years. My wife and Mary quit about five years ago, and have become great opposers of the habit. Nancy quit this summer, and thinks she can hold out faithful to the end. My wife thinks it has been an injury to her health.

If you wish to send one smoker to all three, you can mail it to me, as one will do for all. If you have any lectures that will be of any help to persuade any one to quit, send some if they are free, as we have a brother we wish to have quit.

Best, Buncombe Co., N. C. R. L. PATTON.

Friend P., we rejoice to hear of the great work you have taken up, and we are glad to see the courage with which your wife and sisters come out and declare their determination to break off from this evil habit. May God bless and strengthen you all. We most gladly send you a "Dose of Truth," and a smoker also.

I saw in GLEANINGS that you proposed to give any one a smoker who would quit the use of tobacco. I have quit the use of it; and if I commence again I will pay you for the smoker immediately.

Meridian, Texas, Oct. 1, 1885. E. T. PERCIVAL.

I have quit the use of tobacco, both chewing and smoking, after using it for fourteen years. Will you please send me a smoker? If I use tobacco again, I will pay for the smoker.

Hubbard City, Tex., Sept. 28, 1885. M. TAMEK.

Seeing your offer to those who quit the use of tobacco, and who expect to continue it, after having been a user of it for 18 years I will solemnly affirm, that I will never use it in any way; if I do, I will pay for the smoker.

Sonora, Ky. HENRY CAUCH.

I have quit using tobacco, and don't wish to begin again. I suppose you will send me one of your 50-cent smokers, for I have some hybrids that are too cross to be endured; and if I begin using again I will send you pay for the smoker.

Huntington Center, Vt. HENRY E. SWEET.

Mr. T. B. Franks says I must tell you that he has quit using tobacco, and intends to stay quit; and if you will send the smoker gratis he would like you to send him one.

F. J. BOSTICK.

Greenville, S. C.

Please send me two smokers—one for William Chamblers, and one for C. B. Williams. They both have quit using tobacco, and say they will pay for the same should they ever use it again. They got me to write for them.

G. W. JOHNSON.

Stinson, Ga., Aug. 9, 1885.

A friend of mine, who has a few stands of hybrids, and cross ones at that, has been an inveterate smoker for a number of years. After reading a few numbers of GLEANINGS he has given up the habit for some time past. He now requests me to write to you for a smoker, and should he commence the filthy habit again, he will pay you for the same.

Carlinville, Ill. J. A. BLAEUER.

"QUIT TO STAY QUIT."

I see you offer a smoker to any person who has given up the use of tobacco. I have done so. I have used the weed for 30 years, and have quit to stay quit. I think it is one of the great evils of our day, for men to come down so low as to use the unhealthful, filthy stuff. If you think me worthy, send the smoker. I will pay for the same if I use tobacco again.

JAMES W. STONEBRAKIN.

Wild Cat, Carroll Co., Ind.

BY THE HELP OF GOD HE WILL NEVER USE IT AGAIN.

A neighbor of mine has put away tobacco after being a slave to it for 22 years, and says by the help of God he never will use it again. He is just starting in the bee business, and says as soon as he is able he will subscribe for GLEANINGS. He got me to ask you to send him a smoker; and if he ever uses tobacco again, he will pay you for it. If he, Mr. S. H. Zouger, fails to pay for the smoker, I will, provided he resumes the use of tobacco.

Hickman, Ky., Oct. 5, 1885.

J. O. BARNES.

Glad to know you are in the missionary work, friend Barnes; and I don't know any better way in the world to make a man stick to his pledge than to have some friend vouch for his honesty in the matter.

HE SPENT ENOUGH MONEY FOR TOBACCO TO BUY A LARGE APIARY.

I have been the worst slave to tobacco smoking I have ever met with. I kept the pipe in my mouth almost constantly; but after nearly destroying my health I was induced to quit. It cost me about twenty dollars a year. I have spent enough money for tobacco to buy a pretty large apiary, the way bees can be bought now. I followed its use almost twenty years. I have tried to quit it a good many times, and failed; but it is over two years since I quit it for good. It is no temptation to me now. I know all who will, can quit its use. If you think I deserve a smoker, I shall ever feel grateful to you.

L. H. ROBEY.

Worthington, W. Va., Sept. 25, 1885.

QUITTING TOBACCO FOR THE SAKE OF THE BOYS.

I am much pleased with your journal. I do not intend to try to get along without it again. Do you sow any thing in the fall to make early feed for the bees? My husband has thrown away his tobacco, and does not intend to use it again, because the little boys wanted some. He says if you give a smoker to all subscribers who stop using tobacco, you ought to send him one. If you will send him one to gratify him, I will try to get you five new subscribers between now and the first of the year.

Bennett, Neb., Sept. 19, 1885.

J. ROSS.

We send a smoker, my good friend; but I should rather have your husband's promise than to have the five new subscribers, although we are always glad to have additions to our list. Quitting for the boys' sake, I should say, is next thing to quitting for Christ's sake. Is it not so?

OUR HOMES.

We will not have this man to reign over us.—
LUKE 19: 14.

EVERY few days something occurs to remind me that I am growing old. People speak of me as belonging among the class of old people, and I find myself telling the children what happened, not only 25 years ago, but 30 and 35 — yes, almost 40. There are a few events that I can distinctly recall to mind, that happened 40 years ago. I have been employing boys and girls for almost 30 years; but of those who worked for me 30 years ago, or even 25 years ago, there is not one remaining with me now. I have just made some inquiry among our hands, for the matter came up at our noon service, and there are two who have been with me for 17 years.

Well, just 23 years ago this fall, a boy came to me for a job, just as boys come even now every little while. He came from the country, but he had good parents, and his step-father was a minister. I happened to be needing a boy about then, and, oh how I *did* want a *good* boy! I had tried a good many boys, but they were of the sort who lay things around and lose them, tip over things and break them, and need so much showing, that it was almost with anguish of spirit that I thought about trying another one. He wanted a little better pay than I had been in the habit of giving. I told him so, but he replied something like this: —

“Mr. Root, if you will let me go to work, and you say, when Saturday night comes, that I have not earned the price mentioned, I will take whatever you say is right, and no hard feelings. I think I can save you enough to make up the difference, if you will let me try.”

The last sentence struck the right spot, and I was glad to have him undertake it on those terms. I can not remember what the price was he wanted, but it was somewhere between $7\frac{1}{2}$ and 10 cents an hour. I will tell you how he started out to save me $2\frac{1}{2}$ cents an hour. I love to tell it, for there is a good moral to it. He got hold of a broom, and I soon discovered that he was an adept in sweeping. He loved his mother, and I presume he had helped her about her housework, and she had taught him how to sweep properly. While he was sweeping he hung up the tools that he found scattered around. If there was not a place for them, he proposed to me that they should have such and such a place; and if they were not made to hang up, he fixed them so they would hang up nicely; and in this way he went through our whole establishment.

When he had got through in the upper rooms he asked permission to “slick up” the cellar. He found an old iron sink in the cellar, covered with cobwebs and slime. He scoured it out with a piece of brick, brushed it off, and then went over it with a cloth. He scoured the wash-basins until he made holes in some of them, then he put up some stout nails for them to be hung on. He fixed a cupboard for the lamps; and when it began to grow dusky where I was reading

my letters, toward the close of the autumn days, a lamp was placed before me, without my asking for it. The chimney was spotlessly clean; the lamp was filled, but not so as to run over. The wick was trimmed, evidently by an expert in caring for lamps; and when he was done, his scissors and arrangements for cleaning and caring for lamps, as well as the coal oil, were all nicely put away. He even went into the dark corners of the cellar and slicked those out; and whenever it came time for his meals, his face was washed, his hair combed, and clothes dusted off, until he looked like a bright, happy boy, which he was. Other boys and girls had considered this kind of work the work of a servant; but he seemed to delight in being a servant. If anybody twitted him of it, he answered back promptly and smilingly, that this was just exactly what he *was*, and that he felt proud of his office; that I had paid him money to serve me, and he *liked* to work where he could show every day that something had been done when night came.

In clearing out and slicking up one day he found a lot of old-fashioned watches, or watch movements, rather, in an old drawer near the watch-repair bench. One evening, after his work was done, and my lamp was placed before me, giving its accustomed clear, steady light, he made a remark something like this:

“Mr. Root, I wonder if you would have any objections to my working a while evenings with those old watches in that drawer.”

I told him that, as they were of no value to anybody, he might do as he pleased with them; and if he broke them all up, they would be worth just about as much. He accordingly worked away at them night after night; but instead of breaking them, he succeeded in making nearly all of them keep time. Although I had formerly been a watch repairer, I gave him no instruction. He said all he wanted was the tools and the watches. Pretty soon he began to repair clocks, and did it as nicely as he did the sweeping. Why, my friends, the boy or girl who is an expert and enthusiastic *housekeeper* can do almost any thing there is to be done in this world. He was very soon able to do almost any kind of work done in the shop. His wages went up rapidly, first a cent per hour at a time; but he soon got into the teens, where he had 15 cts. per hour; then 18, and, if I am not mistaken, by the end of his second year he had 20 cts. an hour. Then he went to a larger city to work for a rich jeweler, and after a while he married one of the girls who worked for me — one of his old shopmates, and together they started life in a new and growing railroad town. We will leave him there for a little time.

During the two years that he worked for me I was not a Christian. I never said a word to this young friend about the welfare of his soul. I was glad to see him spend his evenings in the way I have told you; and when he told me his step-father was a minister, I presume I thought my apprentice ought to be a good steady boy on that account, but I gave him no word of encouragement in that direction. He was much at-

tached to me, and I believe he considered me to be a good man. Perhaps the fact that I held aloof from Christian people and the churches, encouraged him in thinking there was no particular need for him to be a Christian. Is it a matter of very much importance, any way? Dear reader, let us step over the 23 years.

Day before yesterday, at the close of the Sabbath sermon I inquired of the sheriff's wife if there was any one in the jail to see me.

"Yes, there is another. He has been in only a day or two. His name is —. Why, they say he used to work for you once. It is Mr. —."

"Why, no; is it really true, that my old friend — is in jail? I have heard a great many times that he had got to be very intemperate, but I had no idea that it had really come to this."

After Sabbath-school it was with a beating heart that I stood before the iron door while my friend undid the fastenings and ushered me in where I had gone so many, many Sundays during the past ten years. My old apprentice was glad to see me, as I knew he would be; but, oh how changed he was! This journal goes regularly to the jail, and I shall have to be careful what I say here, for his eyes will probably meet this. May God help me to remember that, while I am telling this simple little tale to you as a warning, I may remember also the soul that will see it too, and possibly suffer while he sees this record on a printed page.

He was not ready to admit that intemperance was the cause of his trouble, for what intemperate man is? A watch had been left with him for repairs; but when the owner came for it, it could not be found. He refused to pay for it, and was sent to jail. After I had talked a little while with him I reverted to former days, and asked him if he remembered how he used to help me about sweeping out and slicking up. His old smile and his old vivacious manner came back, as he rose up and called me to come and see what he had been doing since he had been in prison. He was the sole occupant, and so he had his own way. He had swept out the cells, and scoured the stone floor. He had gone over the sink and washing utensils, just as he had when a boy. By way of pleasantry he informed me that he had scrubbed one "coat" off from the windows, and that he was going to put on the "finishing touches" next day. I do not mean to say that the jail was badly cared for, by any means, for it was as well taken care of, or better, than such places usually are; but I knew the sheriff often had trouble to get the prisoners to scrub the floor and keep the place looking ordinarily decent. Here was one prisoner, however, who did not need even the asking to do this kind of work. Poor —! His prevailing trait was there still; and although he showed plainly the marks of the years that had passed, he loved neatness and order as he did in his childhood. He used tobacco, of course, and was inclined to argue with me when I intimated that it *might* not be just the thing. He loved his mother and his *Bible*, so he

said, but he was not willing to follow the Bible teachings, although he kneeled by my side and responded by an amen when I prayed for him.

Now, my friends, let us consider the text at the head of this talk; and let us consider, if you choose, the great question as to how it comes, that young men of such great promise do so many times turn out so sadly. Why should he be here in jail, when he might be a useful and respected member of society, filling some important place of trust and honor? Some of you may say that it was all owing to the fact that we permit open saloons throughout our land, and that whisky is responsible for his downfall, and the downfall of thousands of others. While I assent to all this, it seems to me that whisky is *not* at the *foundation* and *root* of the evil, after all. The young man need not have touched whisky. I feel quite certain, that, while he was with me, he had no taste for it, and knew nothing of its bondage. Why did he commence using it? What was the attitude of heart that induced him to touch a thing he had been warned against from his earliest recollections, just as you and I have, my friends? What should possess *anybody* to touch or tamper with intoxicants? I presume a good many of you will feel like saying outright, "It was the very prince of the powers of darkness *himself* who started him on this road," and I agree with you. *Satan* is at the bottom of intemperance, as he is at the bottom of every other evil, and there is never any danger, unless we choose, and choose voluntarily, to follow *Satan* instead of choosing to follow *Christ*. You may reject this, and our friend himself may say that he never *voluntarily* chose *Satan*. There is one thing certain, however, my friends—he did *not* choose *Christ*; and Jesus says, that "he who is not for me is against me." The fact that he had not chosen *Christ*—that he neglected to choose *Christ*, or that he *refused* to choose *Christ*, is almost equivalent to saying that he chose *Satan*. I do not mean to be fault-finding, and I do not want to reproach, for I, too, was guilty of the same charge during the whole two years that he worked for me. He knew that I was not for *Christ*, therefore I was indirectly in league with *Satan*. Had I been teaching *Christ* as vehemently as I taught and encouraged my young friend in habits of neatness and order, he might have been—nay, probably would have been, a professor of religion to-day.

Well, then, if this matter of accepting or rejecting *Christ* is something of such vital importance, how shall we know when we are straying from the straight and narrow path? To make the matter clear to you, as I see it, let us digress a little. When *Jesus* came into the world, men were very much disappointed in him. The Israelites—God's chosen people—were *greatly* disappointed. They were looking for a powerful earthly ruler—a rival of *Cæsar*, and they nursed up their revengeful feelings, and handed them down from father to son for centuries, looking forward to the time when they should, by the aid of this earthly ruler, trample the Roman power under foot. They had the

words of prophecy, telling them that Christ should be a man of sorrows, and acquainted with grief. But they forgot it, or ignored it. They would have it, that he was to be a man of the world. When he came and told them that his kingdom was not of this world, they were disappointed and disgusted. Pilate asked him if he was a king. He replied, "Yes, I am a king; to this end was I born, and for this end came I into the world." That they might not make any mistake, however, he added, that his kingdom was to bear witness unto the *truth*. He was to be the *king of truth*, and not a rival to earthly rulers.

Now, my friends, I wonder if it would sound harsh if I should say the time has been when *you* considered this matter of Christ, and turned away in disappointment; that is, providing you are not among those who are *known of all men* as a follower of Jesus. The subject, sooner or later, comes up to all of us. We are obliged to decide in regard to Christ's claims. We have said in our hearts, "We will not have this man to reign over us," or else we have decided we *would* have him to rule over us. Our boys who are growing up are deciding this question to-day. They are influenced greatly in their decision by the stand which their fathers and mothers, or employers or teachers take.

In talking with my friend in jail, he said he was a good deal surprised when he heard of my conversion; that he had somehow got into his head that I did not need converting. Most of my readers know what a blunder he was making. Perhaps, my friend, you have sons or daughters who are deciding this question now; may be it is a brother or sister. How shall you tell? The Jews refused to have Christ rule over them, because he forbade fighting with the Romans. He told them that, if his kingdom were of this world, then his servants would be expected to fight for him; but he absolutely forbade even this. When one of them struck at a Roman and cut off his ear, Christ used his miraculous power to restore it; but that miraculous power was never brought into action to save himself, nor even to convert the stones into bread when he was hungry. They jeered at him, and threw it up at him, while he was on the cross. "He saved others, himself he can not save." The idea, that any man who had unlimited power in his hands, and yet would not use it, even for self-protection, was so preposterous and utterly ridiculous, that they fairly hissed at such a thought. It was not the Jews only, but the Romans also — in fact, all nations of the earth, gathered there with one voice declared (when the character of the Savior was held up before them, and illustrated by such object lessons as only Christ could and did give), "Away with such religion! We will have none of it. By no means, and under no circumstances, will we consent to follow this man, or have him rule over us. No matter if he *has* performed miracles; no matter if he has even *raised the dead*; why doesn't he help *himself* now, if he *can* help himself? Do you mean to say that he *can*, but will not? Away with such folly!"

And the world rejected him in scorn, and turned their backs, and spit upon him, to indicate their fierce hatred and bitterness toward such a king and such teachings.

As I go over this scene, dear friends, it does seem to me as though the world has made progress since that time. Then, only two or three poor foolish women (as the world looked at it) stood by him. Yes, there was one man who braved the world long enough to stand near during his expiring agonies. But even that man, and those women with woman's faith, never even guessed, as it would seem, that this was not the *end* of his dominion and his power and his kingdom. Rejecting Christ *then*, was plain to see. It was a plain, simple act. How is it now?

When our young friend brought me my lighted lamp, as I told you about, and placed it on my desk so that I could read my letters, I was, at that very time, rejecting Christ. Do you ask how? Some of you know how plain it was made to me when my eyes were opened. There was a right-hand sin at that time that stood in the way of Christ. I knew it, and I knew I could not be a Christian unless I cut it off and cast it from me, as Jesus demands. I did not connect it in just the way spoken of in Matthew 5:30, but I knew there was an unwillingness in my heart to give up all and follow Christ. I had considered the matter well, and decided that *I would not have this man to rule over me*. I had determined to manage things myself in my own way, despite Christ's claims or *any* claims. I had not come to this determination with any *direct* purpose of wronging any one, or making any trouble anywhere; but still, that was just about what it amounted to. When my apprentice, with whom I was so well pleased, began urging to have his wages increased a little faster than my better judgment approved, I felt a little sorry to see him show just this spirit; but yet I did not think very much about it. When he a little later began to prefer to be out evenings, instead of working at his old watches, I felt a little more anxiety; and when he commenced to use tobacco, I could not help feeling, even though I was a sinner myself, that he was starting out in a way that did not promise quite right. By the way, what spirit is it that prompts a young man to want to go about the streets with a cigar in his mouth? Christ said his kingdom was not of this world. Now, it has seemed to me that a young man's first cigar seems to say more plainly, perhaps, than almost any one single act, "I am for this world." Certainly no young man who has serious thoughts of becoming a Christian ever began to use a cigar *because* of that decision. Some one has several times sent me a copy of a paper entitled *This World*. The heading is appropriate. The paper is published for the people of this world, and this world only. They might have put right under this title, "We will not have this man to reign over us;" and then if they had gone on to make a picture of the character of Christ, and had declared the teachings and sentiments of the paper to be in direct opposition to Christ's teachings, they would have hit it exactly.

I told you, a few months ago, of meeting a saloon-keeper in jail, and of trying to read to him some of Christ's teachings. When I got to that chapter about loving our enemies, and doing good to those who hate us, the thought was so fairly repulsive to him that he sprang up out of his chair, declaring that such talk as that was so disgusting to him that he could not stand it. His actions and words said, "We will not have this man to reign over us." I have noticed other incidents, showing that, where the heart is steeped in sin, and where one is guilty of crime, the words of Christ arouse almost to a frenzy. The disposition seems to be just about the same as the world showed at his crucifixion. Now, do not be disheartened, dear friends. Christ's kingdom is making great strides. The conflict with evil, during the centuries that are past, has been a long and fierce conflict. But that meek spirit is beginning to prevail. When Jesus said, "Blessed are the meek, for they shall inherit the earth," he did not tell us that long centuries must pass before the fulfillment of the prophecy; but he knew it, nevertheless.

Now, do you not agree with me, that it is not whisky, nor even dramshops? It is not bad companions; it is not impure books, even, nor is it altogether owing to childhood's teachings; but it is the attitude of the heart. Is it not the *choice* that every human being makes, when the matter comes fully and fairly before him? First he says in his heart, and then in his actions, "We will not have this man to reign over us," and then come all these other dire evils. After having said this, he is ready for tobacco; he is ready for intoxicants; he is ready to take hold of an impure book, to open it and look upon its pages; he is ready for Satan, and whatever Satan may bring. On the other hand, if he chooses Christ and him crucified, and says, in thought and act, "*Get thee behind me, Satan,*" how can any of these things harm him? In that attitude he never once contemplates such a thing as touching tobacco or whisky. The bad book would be destroyed before his eyes had even glanced at the evil engravings in it, had he the power to destroy it; and if a pure-minded young man or woman is ever excusable for an act of rudeness, I think either of them would be excusable for destroying a book that is positively bad, no matter how they got possession of it, or who is the owner. One of the girls in my employ once snatched a whisky-bottle from a young man, and threw it out of the window while they were riding in a railroad car. He was partially intoxicated, and was making himself very obnoxious. Do not, I pray you, think me oblivious to what is being done by temperance workers and reforms in general. I only wish, in this paper, to call attention to the fact that, with Christ's love in the heart, and a spirit of obedience to him, our boys and girls are safe under all circumstances; but with the other attitude, indicated by our text, they are never safe under *any* circumstances.

Blessed are the pure in heart, for they shall see God.—MATT. 5: 8.

AUNT KATIE HILTON TELLS HOW TO BE OBSERVING.

SOMETHING FOR THE JUVENILES.

DEAR CHILDREN:—How many of you can tell, after you have been in a place, where the most prominent things are? Do you think two of you out of ten could tell me? Now, do you know that is a trait worth cultivating? Suppose I ask Johnny to get the flat-irons. Don't you believe he would say, "Where are they, mamma?" when he had seen where mamma kept them many and many a time? Supposing you hired a boy or girl to work for you, and you took considerable precious time to show her where things were, don't you believe you would think the most of that child who could go and get, or tell where a thing could be got, immediately? Now, I do not believe in having a person, when he is in a strange place, staring at things nor prying into things. Learn to notice, and remember; but do it quietly and quickly.

One dear little girl I used to know used to amuse me very much with that peculiar trait. She was a very quiet child—one that you would least suspect of prying about, and, in fact, I never saw her examining any thing; yet if any thing were lost, or we were wondering where such and such a thing was, she would always say, "I can tell where it is, Aunt," and she generally was correct.

It is very convenient, not only to ourselves, but it is often a great help and pleasure to others. Now, little ones, practice it, and see how well you can do. Some have the faculty of describing dress. I do not advise you to cultivate that trait, for I feel that it leads us wrong sometimes. While looking at dress we are apt to get to criticising, and may be to envying, and we fail to see the person while looking at the dress; but if we quietly examine the person, we can often find something lovely and well worth seeing, even in those who at first sight seem almost beneath our notice. And how nice it is, when we hear some one condemned, to be able to speak a kind word for him! Learn to be bright and observing; and if you can not talk much, you can show by your manner that you are trying to understand.

A friend told Mr. H. an incident the other day that partly illustrates my meaning. He was going on a passenger steamboat from Los Angeles north. One day the fog settled down early after noon, and was so thick that nothing could be seen to guide the ship by, so she was run on "dead reckoning"—that is, they knew about how many miles the boat could go in an hour, in her usual track. About four o'clock Mr. P. said to the captain, "Captain, I wish you could put me off here."

"Why, where do you suppose we are?"

"Just off Point Sal."

The captain laughed.

"Why, friend, we are nearer Port Harford, about 30 miles further north than Point Sal."

Mr. P. could not quite believe it. His home was at Point Sal, and he had noticed the sound of the waves until he felt that he knew them, and so he stood at the bow of the boat, looking and longing to see the familiar shore where his loved ones were, from whom he had been separated so long. While still trying to see, he heard the waves striking on Seal Rock, or thought he did—a large rock that stands out in deep water quite a bit from shore. He felt so sure that he redoubled his watchfulness, and

soon there loomed up, close to the bow of the boat, a monstrous rock. The captain had also come to the bow of the boat, and Mr. P., with a strong exclamation, called to the captain, and told him there was Seal Rock.

"Hard a-starboard!" screamed the captain; and the boat, quickly turning, just missed going upon that rock, where in all probability she would have been broken up, and may be many lives lost.

Los Alamos, Cal.

AUNT KATIE.

Aunt Katie, I thank you for the little lesson you have given us. You will notice that I have something to say on this same trait, in the Home Papers this month. Using our eyes and ears, and training them to be faithful servants, is a wonderful help to any one who wants to be helpful to his fellow-man. In the incident above, this man's remarkable powers of observation, with ears as well as eyes, saved the ship, and the crew with it, from, possibly, a watery grave.

CARP IN FAR-AWAY CHINA.

SOMETHING ABOUT HEATHEN WORSHIP AND SUPERSTITION THERE.

ABOUT six miles from the city of Foochow is a mountain called Ku-shan, or Drum Mountain, which rises directly from the plain to the height of 2903 feet. Half way up the southern slope is situated a Buddhist monastery, covering two or three acres of ground. Embowered in trees, and watered from the mountain above, it constitutes a delightful summer resort. When the long-continued heat of the plain below begins to tell on us thin-skinned Americans, a little money can secure us a rest here, even if we do eat beef, kill vermin, and commit other such enormities. There are about one hundred and fifty Buddhist priests connected with the establishment. Of idols, large and small, there are perhaps three hundred. The largest of them are three, called the "Three Precious Ones." They are each about twenty feet high, and are made of wooden frames plastered over with clay, and then overlaid with goldleaf. They sit side by side in the main temple, cross-legged, each on the figure of a gigantic lotus flower, and their faces wear the most perfect expression of dreamy repose. Public worship is held in their presence twice every day. About half-past three in the morning, the priests, to the number of sixty or seventy, are summoned from their couches by the beating of a fish-drum. This is the trunk of a camphorwood-tree, carved in the form of a fish, and hollowed out so as to resound. They spend about an hour in worshipping Buddha. The worship consists of repeating over and over, in various strains and postures, the words, "Aw-me-taw-huk," which is the Chinese form of *Amida Buddha*. A part of the time they are standing, a part of the time kneeling, and another part of the time, marching about. Bells, large and small, and curious wooden drums of various sizes, are by turns tolled and beaten to keep time. The same thing is repeated about 4 p. m. The end and aim of all they do is to make merit for themselves, or others who pay them for it.

Connected with this monastery is a large fish-pond in which are kept a number of fine carp as a work of merit. Any one wishing a share in the

merit buys small hard biscuits of the priest in charge, and throws them to the fish. It is fine sport to see the great fat fellows splashing, pushing, and crowding in the water, trying to suck in the biscuit. The priests consider it a sin to harm even the smallest living thing.

One stormy day several of us were sitting in one of the temple buildings, near the back side of the premises, reading aloud from a book, when we were interrupted by a sudden outcry. One of the priests had just encountered a good-sized snake, which the storm had driven in. Of course, he could not think of killing it, so, loudly shouting, "Aw-me-taw-huk," he seized a broom and a dustpan, shaped like the toe of an immense shoe with a handle to it, swept the snake into this, and, keeping it there by occasional pushes with the broom, he carried it about one hundred yards to the front entrance, and threw it out. The snake attempted to crawl back two or three times, but was thrown further and further, each time, till it gave up and went elsewhere for shelter.

Some of the priests are fine-looking men, but most of them are quite ordinary. Many of them seem sincere and earnest. But one of the worst things about idolatry is, that a man may be very devout and sincere in it, and still remain a rascal. But no one can be a sincere Christian, and not be a good man.

J. E. WALKER.

Foochow, China, Sept. 1, 1885.

Many thanks, friend Walker, for your very interesting letter, especially that part relating to the carp. Perhaps I might inform our readers, that we have just now a little greenhouse, 19 x 24 feet; and in the center of the building, under the large central bed, is a tank, or cistern, open on all sides, where we have a dozen or more carp swimming about as happy in the warm sunshine as ever carp were in the open air, for aught we can see, and we hope to see how large they will grow by next spring. We think a great deal of the carp, like your Chinese friends; but if a rattlesnake should invade our greenhouse, I don't think he would get a chance to crawl back many times.

A GOOD REPORT: 157 LBS. OF HONEY PER COLONY.

HONEY TO BE NAMED, ETC.

ISEND you by to-day's express a sample of extracted honey; and to settle a dispute, I want you to decide the kind of flowers it was gathered from. I have 2000 lbs. like the sample yet, and 1200 lbs. of candied honey. Extracting 6000 lbs. of honey I got less than 12 lbs. of wax from cappings and broken combs. I think you will conclude it is good enough, if it was taken before it was capped over. I keep it in barrels, and the sample hasn't begun to candy yet. It may commence, though, since I put it in the bucket. What is such honey worth?

I am now fixing my bees for winter, by contracting the brood-nest from 6 to 3 combs, most of them on 6 combs, with 35 lbs. of honey. I took the bee-bread away, but the bees were bringing in pollen yesterday fast. I have fed 500 lbs. of granulated sugar to finish out the combs. I will pack leaves around all my bees, and winter on summer stands. I wintered them all that way last winter—43 colonies. I had a

colony on the scales that gathered 31 lbs. in one day, and 148 lbs. in seven days, from English clover, and my whole apiary averaged 157 lbs. per colony, spring count. I took 5 barrels of nearly pure red-clover honey in June, from which I skimmed over 50 lbs. of pollen with the Muth honey-knife. Every few days I would skim it again, and more would rise.

Marion, Ind., Oct. 26, 1885.

B. T. BALDWIN.

Friend B., I should say that the sample you send is clover honey, without question, and it may be from red clover; still it is not ripe enough to bring a good price in the market. If I were you I would let it be in the hives until it is all ripened over, if it does not get thicker than this. We have been paying at the rate of 7 cts. per lb. for good thick clover honey; but I don't believe we could sell honey like your sample, unless it was ripened in some way to make it thicker. Some of the friends who are used to that kind of work can tell what the expense and loss in weight would be, better than we can.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,
EDITOR AND PUBLISHER,
MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, NOV. 15, 1885.

He saved others; himself he can not save —MATT. 27. 42.

DISCOUNTS FOR ORDERING GOODS NOW, FOR
NEXT SEASON'S USE.

OUR discount of 5 per cent on goods ordered now for next season's use will be continued until Dec. 1. Please mention it when you make an order. This is in addition to all other discounts.

PHOTOGRAPH OF THE MEMBERS OF THE BEE-KEEPERS' CONGRESS, TAKEN AT NEW ORLEANS.

We have not as yet been able to obtain the names of all shown in the picture; but the fact that it contains good photographs of the noted bee-keepers enumerated on page 599 of our September number, ought to make it worth a dollar to any one conversant with the bee literature of the past ten years. We can mail it at the above price.

HUMBUGS AND SWINDLES.

ONE of our subscribers sends us a new circular from Mrs. Cotton, in regard to her pure-blood Italian bees at \$20.00 a colony, and the same old story in regard to her book with drawings, illustrations, etc., for \$4.00. He adds, as a postscript, at the bottom of the circular, the following:

She caught me once—can't catch me again.
Blackstone, Mass., Nov. 10, 1885.

J. HERVEY.

W. Z. HUTCHINSON'S 6-CENT SHIPPING-CASE.

SOME of the friends seem to have got the opinion that these cases could be made to order to hold any size of section, for the above very low price, but this is impossible. The only way they can be made

for 6 cts. is by making a great lot of them at once, and you know we can not do this for odd sizes. A friend just now sends us an order for four, to hold an odd-sized section. For such an order we should have to charge about ten cents, and I doubt if it would pay expenses, even then.

STANLEY'S AUTOMATIC HONEY-EXTRACTOR.

OUR friends will notice that the reports we called for in regard to these machines have all been remarkably favorable; and judging from the machine submitted to us for inspection, I should say that G. W. Stanley & Bro., of Wyoming, N. Y., have the best machine for reversing the combs by simply reversing the motion, that has ever been brought before the public. They make them for reversing frames from two in number up to ten, and the price is from \$12.00 to \$58.00, according to the size and number of frames. They furnish circulars on application.

WIRED COMBS; THEIR ADVANTAGES.

AFTER the mishap mentioned on our first page, it was found that not a comb had been broken from the frames in any of the six hives; but had these combs not been wired, the damage would have been fearful. The shock was so great that some of the sticks composing the frames were broken; but these can be replaced with but little trouble. The wires held the combs together, so that but little if any honey was started to running. Some bees were mashed, but no queens were killed. The accident was caused by a slip of the foot of the driver, who was unloading manure. It had been raining a little, and the bed of the wagon-box was—well, you know how. When she started he grasped for the lines, but his foot slipped, and—remember the moral.

ADVANCE IN CUT NAILS.

A GREAT many goods are a good deal lower once more, as you will see by our new price list, 50th edition, sent on application. The American watch, that has been so many years \$10.00, is now \$9.00, and better made than ever before—incaised in 2½-ounce coin-silver case, manufactured by the American Watch Co. themselves. While so many things are down, nails are having a boom upward, caused by strikes among the nail-makers. Instead of the prices in our list, read—8d nails, 5 cts.; 6d common nails, 5½ cts.; 4d casing, 6 cts.; 4d common nails, 6 cts.; 4d casing, 6½ cts.; 2d fine, 9 cts. Prices by the whole keg of 100 lbs., a little lower. No advance on wire nails at present writing.

BEEES AND GRAPES.

ALTHOUGH the suit concerning the bees and sheep has terminated so happily, not so with the California suit by one of the grape-growers. The jury gave a verdict against the bee-keeper for \$75.00 and costs of suit, which amounted to over \$60.00. Now, it is my opinion, as perhaps many of you know, that bees are sometimes annoying to grape-growers, even if they do not puncture sound grapes; but whether the annoyance is sufficient to warrant grape-growers in commencing prosecution in general against bee-keepers, we presume will have to be determined by the courts. At any rate, we bee-keepers ought to be fairly represented in the matter. To that end, I would advise all, who have not already done so, to send their one dollar to the editor of the *A. B. J.*, that they may become members of the Bee-keepers' Union. For further particulars, see *A. B. J.* for Nov. 11.

FOREIGN BEE JOURNALS.

WE not only receive and keep on file all the bee-journals published in the English language, but we have most if not all published in foreign languages. Our friend Jacob, of whom I have often told you, reads German, and Mr. W. P. Root, our shorthand writer, reads French and Spanish; and while we are about it, our friends of the *Bulletin d'Apiculture* have given our price list such a very kind notice that we take pleasure in reproducing it below.

Among the catalogues which we receive, the following deserve special mention: That of A. I. Root, Medina, Ohio, Editor of *GLEANINGS*, and the largest manufacturer of apicultural articles in the entire world, contains 40 large pages, with several hundred engravings, and in it one finds enumerated every thing of which a bee-keeper has need—hives, bees, extractors, smokers, cans, instruments, and accessories of all kinds; foundation-machines, scales, circular saws, steam-engines, carpenter tools, seeds of plants, and even watches.

Of course, I am not able to read the journals in other languages; but our stenographer runs them over; and when he finds points of interest my attention is called to the fact, and I always "look at the pictures" and I feel a great pleasure in looking over these periodicals in other languages, even though I can not read them.

QUEENS DURING THE WINTER MONTHS; WHO SHALL FURNISH THEM?

ALTHOUGH we have been in the habit for many years back of mailing queens almost every month in the year, we have decided that it does not pay us nor our customers to continue the business, say after Dec. 1; but where you *must* have a queen after that date, I would suggest that you by all means get them from friends in the South. Some enterprising queen-breeder in the Southern States can easily prepare himself to ship queens any month in the year, to any one who may have need of a queen. Now, to save a good deal of useless correspondence, will not some of our Southern friends announce their readiness to furnish queens all winter? They can be shipped to us, it is true, and we could re-ship them; but this seems to me an expensive and foolish piece of business. During the past winter we had orders from the Southern States for queens during the month of January. Well, to fill such orders we have many times sent queens that had just come to us from the South. The poor little creatures were obliged to take a trip of over a thousand miles into a Northern climate, and then go straight back to pretty near where they originally started from, just because folks preferred to send to us, rather than to neighbors not very far off. We will give the names of those who are prepared to send out untested queens on receipt of orders, from now until Jan. 1, free of charge, provided you who send in your names have the queens all ready to mail. Of course, we want the names of men who are known to be in good standing.

THE SHIPMAN STEAM-ENGINE.

WE have just received one of the above engines, in order to give it a trial, to see how it would answer for bee-keepers, for hive-making, etc. Only two sizes are made—one and two horse-power; prices, \$125 and \$200 respectively. The engine uses a cheap grade of coal oil, instead of coal. Now, it is a fact that coal oil is more expensive for fuel than coal; but to offset this it is made so automatic that it works without an engineer, and an engineer usually costs more than coal. Again, the engine itself turns on the oil in proportion to the work to be done. If you require a whole horse-power, the machine itself turns on the oil accordingly; but the

minute you throw off the machine, and ask it to do something requiring only the power of a child, the oil begins to be cut down so as to consume that amount and no more. It takes what water it needs, in just the same way; and in case of any accident of any kind, such as water getting out of the boiler, too much water coming in, or too high pressure, it blows itself out and cools off. For instance, you can set the limit of the steam-gauge at any point you wish, according to the work to be done; that is, if you do not wish the pressure to go above 100 lbs., the machine itself cuts off the fuel when it reaches that point. It seems as if it were impossible for it to explode or do any harm. The machines are very extensively in use for running printing-presses, and such like work, and it seems as if they ought to be worth what they cost, almost anywhere. Of course, if a bee-keeper expects his business to grow, he wants a larger engine than one-horse—may be even more than two-horse; but to those who have been in the habit of running a saw by foot power or hand power, these little engines would, in a very short time, earn the \$125. You can have them shipped promptly to any address. They are so light that the shipping is but little. You will notice, that the two-horse-power engine costs a little more than the two-horse power engines we have been selling, and advertising in our price list.

PANSIES.

A BEE-KEEPER IN TROUBLE, AND HOW WE MAY HELP HIM OUT.

I LOST my bees, and it left me flat on my back, as I had put all I had into them; and now as GLEANINGS and bees have got me into trouble, it seems but just that they should help me out again. I will tell you how. This summer, from May 1st until now, I have had a large bed of splendid new improved, fancy, large flowering, German pansies (the very choicest known), that have been in constant bloom, the wonder and admiration of all, averaging from 90 to 200 flowers in bloom upon a single plant at a time, flowers from 2 inches across upward, and of a hundred different colors, and marking all rich and velvety. The bed will bloom until snow. I have thousands of fine young plants from above bed, and I will send by mail 10 or more plants (mixed) to any one for 1 cent each (never sold for less than 5 cts. each). These plants will bloom from very early in the spring until snow next year.

I lost none in wintering out of doors last winter, or in transplanting. I send you a few flowers cut from above bed. Throw them into the coldest water you have until freshened up. I have 2 swarms of bees—1 Italian, 1 hybrid; they are doing well. Who has a good Italian queen to exchange for pansy plants?

F. V. SARGENT.

Hubbardston, Worcester, Co., Mass.

Friend S., as a rule we do not admit advertisements in this way; but when you offer those large pansies for only a cent each, it seems to me we may please our readers, and help you too, by making public your offer. If they will blossom this winter in our greenhouse, you may send me 500 to start with. The samples you send are certainly very handsome.

DADANT'S FOUNDATION

is asserted by hundreds of practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sag, most regular in color, evenest, and neatest, of any that is made.

It is kept for sale by Messrs. A. H. Newman, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; F. L. Dougherty, Indianapolis, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Ezra Baer, Dixon, Lee Co., Ill.; E. S. Armstrong, Jerseyville, Illinois; Arthur Todd, Germantown, Philadelphia, Pa.; E. Kretschmer, Coburg, Iowa; Elbert F. Smith, Smyrna, N. Y.; C. T. Dale, Mortonsville, Ky.; Clark Johnson & Son, Covington, Ky.; King, Aspinwall & Co., 16 Thomas St., New York City, C. A. Graves, Birmingham, O.; M. J. Dickason, Hiawatha, Kan.; J. W. Porter, Charlottesville, Albemarle Co., Va.; E. R. Newcomb, Pleasant Valley, Dutchess Co., N. Y., and numerous other dealers.

Write for samples free, and price list of supplies, accompanied with 150 complimentary and unsolicited testimonials, from as many bee-keepers, in 1883. We guarantee every inch of our foundation equal to sample in every respect.

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FOR SALE.

400 COLONIES OF BEES.

Will exchange for good horses and mules.

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WEEKLY, \$1.00 PER YEAR.

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The only bee journal printed in Canada, and containing much valuable and interesting matter each week from the pens of leading Canadian and United States bee-keepers. Sample copy sent free on receipt of address. Printed on nice toned paper, and in a nice shape for binding, making in one year a volume of 832 pages.

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We are now in the market, and will be during the entire season, for all honey offered us, in any quantity, shape, or condition, just so it is pure. We will sell on commission, charging 5 per cent; or if a sample is sent us, we will make the best cash offer the general market will afford. We will handle beeswax the same way, and can furnish bee-men in quantities, crude or refined, at lowest market prices. Our junior member in this department, Mr. Jerome Twine, has full charge, which insures prompt and careful attention in all its details.

Sample of comb honey must be a full case, representing a fair average of the lot. On such sample we will make prompt returns, whether we buy or not.

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MUTH'S

HONEY-EXTRACTOR,

SQUARE GLASS HONEY-JARS.

TIN BUCKETS, BEE-HIVES,

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LOOK HERE!

To introduce my strain of pure bright Italians, equal to any in the United States, I will offer tested queens, \$1.00 each; extra fine, selected, \$1.50 each; one-frame nucleus, consisting of one extra select queen, one frame of brood, 1/2 lb. bees, for \$2.00. If you want any bees, send me your address on postal and I will send you sample by return mail. Beeswax or honey taken in exchange.

22tfdb

THOMAS HORN,
Box 691, Sherburne, Chen. Co., N. Y.

VANDERVORT COMB FOUNDATION MILLS.

Send for samples and reduced price list.

2tfdb

JNO. VANDERVORT, Laceyville, Pa.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column.

3btfdb



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TERMS: \$1.00 PER ANNUM, IN ADVANCE; 2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00, 10 or more, 75 cts. each. Single Number, 10 cts. Additions to clubs may be made at club rates. All are all to be sent to ONE POSTOFFICE.

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NOTES FROM THE BANNER APIARY.

NO. 72.

BURYING BEES.

J. B. WHITAKER, on page 753, asks about burying bees. If I had no cellar in which to put bees, I think I should bury them. If a cellar can be kept at a proper temperature, I see no advantage in burying bees, over cellar wintering; while the burying of bees and the "unburying" of them, especially the "slicking up" afterward, is not the most agreeable kind of work imaginable. The plan mentioned by Mr. W. is all right, only be certain that they are buried deep enough so that frost will not enter. The few colonies that I put in a clamp last fall wintered the most perfectly of any colonies that I had.

QUEEN-EXCLUDING HONEY-BOARDS.

I first made the Heddon honey-board to be queen-excluding, in the way mentioned by Geo. F. Williams, page 740; but the trouble was in adjusting the slats and keeping them adjusted; and it was when talking the matter over with R. L. Taylor that he suggested using a saw of exactly the right thickness for cutting slots in a thin board, thus doing away with the adjustment of slats; and, if the bees would not fill up these slots in the board, I would ask for nothing better. It is possible that this trouble may yet be remedied; if it isn't, we shall have to clean out the wax once a year, or else use zinc. It is the

HEDDON SHIPPING-CRATE,

not the "Hutchinson," that I am selling in the flat at 6 cts.; and were it not that I can get the lumber very cheaply I could not furnish them for that

price. To those who have written, asking for the privilege of manufacturing, I would say, apply to Mr. Heddon. It is another one of the many good things he has given us. It is amusing, sometimes, to hear dealers, and even bee-keepers, ask, "How many of those cases do you put into a crate?" The idea! Put the neat, easily handled cases into a big crate or box, so that the railroad men can roll them over and over, and "dump" them? No, never! If one is not enough for a load, a man can take two or three, or even four, just according to his strength or inclination.

EXPERIMENTS IN WINTERING.

We have been selling and trading off, and uniting our bees, until we have only 50 colonies left. Some of these have sugar stores and no pollen, or bee-bread, in the combs; some have sugar stores with a little bee-bread in the combs, others have sugar stores with combs fairly loaded with bee-bread. Some were undisturbed with their natural stores, while others have both sugar and honey. Those that we have sold had this same variety of stores, and the hives were marked with the kind of stores. We shall put nearly if not all of our bees in the cellar under our house.

8—W. Z. HUTCHINSON, 77—30.

Rogersville, Mich., Nov. 25, 1885.

Friend H., I am very glad indeed to hear you say that a cellar can be made to answer as well as the clamps. Clamps are certainly a deal of trouble, and the general untidiness about them is enough of itself to discourage me from recommending any such system. The six-cent shipping-crates are nothing particularly new, except they are made to hold a small number of sections, and are so

arranged that they can be made very cheaply. We will try to have an engraving of them made for our next issue. We shall be glad of a report of the result of your experiments in wintering.

SOLAR WAX-EXTRACTORS.

ALSO SOMETHING ABOUT POISONOUS HONEY.

THE subject of solar wax extractors has excited considerable attention among bee-keepers during the past year or two. Everybody who has tried one seems enthusiastic over them. I made myself one last August while I was waiting for that honey to come that never got here, and I would not want to do without it for several times its cost. We had very little hot weather after I got it finished, but it worked to a charm, and proved to me beyond doubt, that, during ordinary summer weather, wax can be made by it with far less time, worry, and muss, than by ordinary means; and, what is more, the wax made is of the finest and most uniform quality, and there is not the slightest danger of scorching or otherwise spoiling it in the making. Moreover, when making wax from cappings (which was my principal purpose in making mine), a large amount of honey is saved that would be wasted by most other methods.

My extractor consists of a V-shaped tin trough, 20×24, and 8 inches deep, eased in a wooden box. To the top of this box is hinged a sash, holding two sheets of glass, each the whole size of the top, separated by a ¼-inch space. Over the whole is hinged a cover, which is lined with bright tin; and a light board, 20×24, is also covered on one side with bright tin. These tin surfaces are for reflectors.

The comb to be melted is placed on a sheet of perforated zinc resting on the sides of the trough, about 3 inches below the glass. When in use, the cover is raised at right angles to the glass, and held in that position by the reflector-board, which is provided with hooks for that purpose, and is placed in the angle between sash and cover. In the morning it is placed on the west side, and at noon changed to the east side. When the extractor is not in use, this board is laid on top of the sash, and the cover closed down over it. You will see that there is a large reflecting surface throwing heat into the extractor, besides that given by the direct rays of the sun, while the double glass retains this heat. Before using the reflectors I found that, on a warm day, a thermometer inside registered 60° higher than one outside; and after I put them on I noticed a temperature of 210° inside one day. We shall probably use it to bake bread, roast meat, etc., next summer. You may be sure that such a temperature melts down the comb very fast. Several lots can be melted down in the course of a day. The wax and honey drip down through the perforated zinc, below which there is considerable space. When the weather is not hot, the wax does not form in a solid cake, as it is shaded by the zinc. When the lower part is full, take out the zinc, when the wax can be easily melted, and, if desired, kept in a melted condition all day without disturbance, thus perfectly purifying the wax. The honey is drawn off through a tube in the bottom. I am satisfied that a single thickness of glass will answer, although it should be large enough to cover the

whole top, as the shadow made by a cross-bar would prevent the melting of a part of the comb. It would be best to have the reflectors of cheap looking-glass, instead of tin, as tin will soon tarnish and rust.

You say, on page 775, that it seems to you astonishing that the heat of the sun alone should melt beeswax. Did you never notice that a piece of wax, laid on top of a hive, especially if dark colored, on a hot day would very soon melt and run? A large part of the heat of sunshine is latent, and we must imprison it and change it to sensible heat, to be aware of even a part of the tremendous power concealed in a sunbeam.

POISONOUS HONEY.

The subject of poisonous honey, which has attracted some discussion lately, is of somewhat more importance to the bee-keeper than it may seem at first thought. The bee-keeper needs to understand the subject thoroughly, in order that he may be able to successfully combat popular prejudice. That such prejudice often exists, is undoubted. Many are of the opinion that certain kinds of honey are poisonous. Others think there are some persons to whom all honey is poisonous. Many are inclined to place great credence in newspaper accounts of poisonous honey, and refrain from the use of all honey in consequence.

By the way, it is a little curious the way the non-bee-keeping public regard and treat our industry. Five hundred deaths from any one of the numberless common accidents of life would hardly cause as much newspaper comment as a single death from a bee-sting. I believe it is a fact, that people are more easily prejudiced against bee-keeping than almost any other occupation. People have been dosed so often with newspaper articles in regard to the adulteration and poisonous qualities of sugar, syrup, canned fruits, etc., that they are quite accustomed to the idea that all such things are adulterated, and more or less unhealthy; yet their purchases of these articles are little or not at all influenced thereby. But when honey is to be considered, it is entirely different. The least hint of adulteration scares off the would-be purchaser. The paraffine-glucose-comb-honey story is not only believed, but acted upon. Dealers have told me that they could sell honey in large, old-style boxes, with their crooked, irregular combs, better than our nice, white, straight section honey, because their customers believed the latter was manufactured.

"The bees *could* not make every box just alike, and straight as a board." A St. Louis man told me it was impossible to buy pure honey of any kind in that city, and that he had bought comb honey which was made of *paper*, and filled with glucose.

So every widely spread and apparently well-authenticated report of honey-poisoning may work great injury to our honey interests. Every traditional idea in regard to the unwholesomeness of honey may do us harm. Let us, then, get at all the facts in the case, so that every intelligent bee-keeper may have arguments at hand to refute erroneous statements. The articles we have had on the subject, especially those by Dr. Higbie and Prof. Cook, have been very satisfactory, and I think have effectually disposed of the subject as far as they have entered into it; but there is another point that I think may have some value. Dr. Higbie is on the right track in the last part of

his article, although his information has probably got a little twisted. I believe honey is sometimes, to a certain degree, poisoned by the poison of the bee-sting. This is not caused by the bees stinging the honey-comb, certainly not by the stings left behind; for, as Prof. Cook says, even if the bees did sting the comb, the stings would not be left behind.

It is quite possible, that honey may become poisoned through the crushing of bees. I think, though, that this may more often come about from the poison *wiped off* from the protruded stings of angry bees. Who, on opening a hive on a cool morning, has not noticed the rows of upturned stings, each with its drop of poison on the tip? What becomes of this poison? It is very unlikely that it is reabsorbed by the poison-sac. I am familiar with the taste of this poison. I have often tasted it upon my hand, left there by a bee that had not stung me. I have also detected it on the surface of sealed honey by touching it with my tongue shortly after such a display of stings as I have mentioned. Now, I think here is at least one reason why some people can never eat honey; why others are unpleasantly affected by any thing more than the smallest portion, and why a large quantity sometimes produces such severe results.

Let me give some facts in support of this. People have frequently told me that comb honey "did not agree with them," while they could eat extracted honey with impunity. It is easy to see that the poison, being on the surface, would be cut off with the cappings, and ordinarily would not get into extracted honey. Other persons can not eat even extracted honey until it has first been boiled, after which they can eat it freely. In this case, the poison, being volatile, is boiled out of the honey. Again, it seems that honey which has been kept away from the hive for some time may be eaten more safely than the same honey, even when well ripened, when just taken from the hive. Here the poison has evaporated, through the lapse of time.

I do not mean to say that all honey contains this poison. Probably that taken by the skillful apiarist during the honey-flow, when bees are good-natured, does not contain a trace of it. But a great deal of honey is taken at such times, and under such circumstances, that it might easily contain appreciable quantities. Have you not heard some old bee-keeper tell how, without smoker, but with bee-hat and buckskin gloves, with trousers in boots, and sleeves tied down, he sallied forth to "rob his bees"? how the bees covered those gloves with stings until you could hardly put a pinhead on a spot without a sting, and how the air was fairly reeking with the venom of the infuriated insects? Is it not possible, that in such a case a considerable amount of venom is deposited on the comb? Suppose a bee-tree is taken under such circumstances, and the venom of crushed bees added to this amount.

Right here there is a difference between "wild bees" and "tame bees," although, of course, the bees in the forest are no more *wild* bees than are those in the box hives out in the orchard, which the owner never goes near, except at "swarming time" or "robbing time." Gentle bees, accustomed to handling and human companionship, and properly handled, do not get into such frenzies as I have described, while "wild bees" do sometimes, when gone at rough-shod at improper times.

I have never heard of a single case of sickness arising from honey sold by me; but my customers have frequently told me how often they used to be made sick by honey taken in the old-fashioned way.

J. A. GREEN.

Dayton, Ill., Nov. 18, 1885.

Friend G., we are very much obliged indeed for your report in regard to the solar wax-extractor, and it begins now to be plain to me that we shall have to add another implement to our list of supplies; and that we may be able to offer the best possible solar wax-extractor, I would ask you to make one just as you would have it, without regard to the time and pains it may take you, and then to forward it to us by freight or express, as you deem proper, with a bill for all your trouble and bother. I want to ask if you have tried the machine with two sheets of glass and one sheet of glass. If you have, and if two sheets are an advantage, why not make the machine with an air-space on all sides, so as to confine the heat? The east, west, and south sides should have an outer covering of a sheet of glass, while the north side and the bottom may be protected by an extra thickness of sound lumber, so as to make a dead-air space between the two. We shall probably have to make the machines of at least two prices—one having cheap looking-glass plates for reflectors, and the other having reflectors of tin. The tin reflectors cost so little they can be replaced for a small amount. Just now, however, a cheap grade of looking-glasses may be had for a very small sum. There will be one objection to shipping a machine taking glasses as large as 20 x 24, because of the risk of breakage on sheets of glass so large. Any other important facts in regard to manufacturing these machines for sale we shall be very glad of, and will willingly pay for. I did feel a little astonished at the reports of wax melted by the sun alone; but by the use of mirrors we may get almost any desired temperature. In our philosophies there is record of a machine made with several hundred small mirrors placed so as to throw their reflection on a single spot, that would melt and burn the most refractory substances.—In regard to poisonous honey, I think you are right. The matter was some time ago suggested, that the venom from bee-stings might make the honey deleterious to people very sensitive to bee-poison. I think Mr. Langstroth called attention to it.

HAULING BEES.

WHAT TO DO WHEN A HORSE IS STUNG.

IN increasing my business beyond that point at which I could keep all my bees in the home apiary, one of the greatest difficulties in the way was the matter of hauling. To sit on a load of bees, in momentary fear lest the bees should find their way out, and make a raid on your team, is any thing but soothing to the nerves. In more than one instance I had to jump from my seat, and, with all possible dispatch, unhitch the horse or horses, and take them some distance from the wagon till I could make every thing secure. By the way, it has been a matter of importance, several times, for me to know what to do with a

horse when attacked by bees. In all cases that have come under my notice, the attack has been about the head; and the first impulse of the horse always seemed to be to get to some place where he could rub his head. Latterly, when trouble occurs I spring to the horse's head and commence rubbing it all over with both hands and arms, and he seems satisfied with that, without showing any desire to run. I do not know whether other horses would act just the same in all cases, but it might be worth while to try.

Of first importance is the matter of fastening the bees in the hive. If you have never had any experience in the matter, you will be surprised to find how difficult it is to shut up a number of hives so that no single bee shall be able to get out, on a journey. There must be no half-way work about it; you must be absolutely certain that every spot is tight—bottom, top, and sides. In hot weather, as when moving to get the benefit of a buckwheat field, abundant ventilation must be provided. For this purpose I have replaced the cover of the hive with a frame 3 or 4 inches deep, the entire top of which is of wire cloth. The quilt is entirely removed, and the entrance closed with wire cloth, and in this way I have safely taken them in the middle of a hot day. Generally, however, I haul them in spring and fall (to the out apiary and back again), when not so much ventilation is needed. No ventilation is given, except through the entrance of the hive. The bees are confined to the hive by a stopper made thus: A strip of wood one inch wide, $\frac{3}{4}$ inch thick, and as long as the entrance of the hive is wide; a strip of wire cloth about $2\frac{1}{2}$ inches wide, and as long as the stick already described. Fold the wire cloth double, making a double strip $1\frac{1}{4}$ inches wide, and as long as the stick. Nail the wire cloth on the flat side of the stick, letting the folded side of the wire cloth project $\frac{1}{2}$ inch. The double-pointed tacks lately figured in GLEANINGS are very nice for this purpose. Place the stopper over the entrance, and drive into the stick an inch or two from each end a $1\frac{1}{2}$ -inch wire nail, leaving $\frac{1}{2}$ inch or more of the nail projecting, so that it may be easily withdrawn with a claw-hammer. After these have been used some time, the nail-holes become so large that it is necessary to bend each nail after driving, in order to hold the stopper tight up to the hive.

To make the top of the hive doubly secure, I use a square of cotton cloth 6 or 8 inches larger each way than the top of the hive. Spread this cloth over the top of the hive, letting it project on each side, then put on the cover. If there is no wind this makes all secure; but if windy, the cover must be fastened on by means of pieces of leather or cotton cloth 2 or 3 inches long. Drive a large tack through one end of the leather into the body of the hive, and another tack through the other end into the cover. Let the cover be thus fastened at two opposite sides or corners. As the covers of my hives rest on cleats, I find it quicker to tie them on with stout twine, running the twine under each end cleat, and crossing it in the form of an X on top. I never fasten the frames in the hive in any way, but I never clean the propolis out of the hives in the spring till after hauling. I once had some combs break down when hauling in buckwheat harvest. They were new, not wired, filled with brood in the lower part, the upper cells empty, and not drawn out. With wired or old combs I have no

fear. If I were shipping on the cars, I think I would fasten the frames in the hive.

I had always supposed it necessary to have a bed of hay, or a spring wagon, to save combs breaking down, until Mr. Von Dorn, of Omaha, told me he used a hay-rack on a common wagon, without hay or springs, and I have since carried them safely the same way. Simply nail narrow strips across the rack, and put little blocks at the proper places, so that each hive will be kept in its own place. A common hay-rack will hold about 20 ten-frame Langstroth hives. As I keep only one horse I usually haul my bees on a one-horse wagon, having a light rack made to set over the wagon-box. In this I can haul 11 hives at a load—3 in the box, and 8 on the rack.

To provide against accident it is well to have hammer, nails, and lighted smoker on the way. Over any rough piece of road I drive very carefully; but on nice, smooth road, I sometimes strike a trot.

I like to unstop the hives as soon as they are unloaded. It is most easily done by using a little smoke, although by moving very slowly it can be done without. C. C. MILLER, 179-340.

Marengo, Ill., Nov. 23, 1885.

Friend M., although it may be that you have planned to tell it at some other time, I have been very curious all through your article to know how you succeeded in "carting" your bees around. Did it pay, and have you made "a great big lot of money" with your bees this year, the way you have been doing lately? You speak of drawing eleven hives at a load. I suppose that you know that, if you used Simplicity hives with a sheet of wire cloth over both top and bottom, you could take almost twice as many as with the style of hives having cleats and projections and porticos, and caps to slip over, etc. We have a wagon that was made expressly to hold a certain number of Simplicity hives; and, put up in the way in which I mention, they are so light that even one horse will draw a great many safely. The Simplicity hive is so simple that there is not much danger of bees getting out, with a wire-cloth frame over both top and bottom. We make these wire-cloth frames by securely fastening the wire cloth on just such strips as we put under the cover. In fact, we throw out all imperfect strips in making hives. This gives us a great surplus of these pieces of wood. Why, we have had so many that we have sometimes burned them up, even though they were just as good as any for holding wire cloth.—We notice that you have increased from 179 to 340, and we are glad and thankful for this little piece of news. But, tell us about the honey and—MONEY.

OUR OWN APIARY.

SNOW AS A PROTECTION, IN THE ABSENCE OF A WIND-BREAK.

TO-DAY is Thanksgiving, and the snow is from four to five inches deep. Many of the hives are banked up with snow. Some of the empty Simplicity hives are almost covered; for, as a general thing, we leave our summer hives out the year round, and then they are all ready for next season.

OUR EVERGREENS AS A WIND-BREAK.

Our apiary has no wind-break in the way of a tight board fence, such as we had formerly at the old home. There is, however, as you doubtless know, an inclosure of evergreen-trees that, in a few years, will afford us the best of protections. The trees when first planted (1878) were from three to four feet high, and at present date they are all the way from six to eight feet, and several are nearly ten feet high. They do not as yet afford much protection, for the reason that they have not begun to bush out, and, as a consequence, the wind makes its way through, the space between the branches being about two feet. With all the advantages of a wind-break, it seems to me there is at least one advantage in having the hives exposed to the wind. Where we have an abundance of snow, the wind, having free access, banks up the hives much better than if the apiary were protected. Our hives being thus exposed to the wind on three sides—north, west, and south—present quite an array of little pyramids. The space between the hives is thus dished out, and the snow banked just where we want it. But for all this, we would by no means say that a protection is not necessary, for in this locality we do not always have snow when we like it. The importance of a good wind-break can scarcely be overestimated. It is only necessary to refer to the successes in wintering of Cyula Linswik and her sister in their home, surrounded by an immense forest. When there a few years ago, the stillness, occasioned by the absence of wind, impressed itself upon me as remarkable.

RABBITS FOR KEEPING DOWN GRASS AROUND HIVES.

It will be remembered, that something over a year ago we made mention of some rabbits. For the past three months we have had a pair of them in our poultry-yard. The number has now increased to nine, though had it not been for the inroad of a certain cat we should have had twice this number. As Mr. Fradenburg has said, they will keep down the grasses to quite a little extent; and if a good number of them were fenced in an apiary they might do good service in the way of keeping down the grasses around the hives. On the whole, however, I think I should much prefer a lawn-mower, as the rabbits are a little inclined to pick out precious morsels of herbage, while the former does smooth, even work, irrespective of taste.

TINKERING WITH HIVES DURING WINTER.

The general work among the bees has, or ought to have, ceased by this time. Of course, if there should be days when the bees can fly, colonies that have insufficient stores can be fed up. Good colonies, when well packed for winter, ought, as a general rule, to be left entirely alone till spring. I remember one winter, that while working with my microscope I had occasion to get a good many bees for dissection. There was one colony in particular, in the house apiary, from which I took my victims. If I am correct, father was not aware that I was getting bees in this way, though I did not attempt to conceal it. But without any thought that I was endangering the colony, several times during the winter I went there, took a few bees and hastily closed the hive, feeling sure that this slight disturbance could do no harm. The following season showed that this colony was dead, when the rest had wintered comparatively well. Merely opening the hive during cold weather will often break the cluster, and the result of exciting the bees is as I have

said. It must not be inferred, however, that a colony must *never* be opened. We sometimes take a queen from a hive in mid-winter, but the weather is such as to permit it.

PREPARING FOR NEXT SEASON.

During the winter months it is well to consider our plans for next year. Sections and hives must be put together, etc. Many new improvements have been suggested during the past year. It is best for us to re-read and consider, so as to be ready for the coming season. For instance, the favorable reports of the sun wax-extractor will warrant us in giving the matter some attention. Perforated zinc is slowly coming into prominence, and should be further experimented upon. Side storing versus top storing; separators or no separators; the best method of preventing after-swarms; clipping queens' wings, etc., are matters of discussion; and your locality, coupled with personal experience, will largely decide which is best. Put yourself at your wit's end. If you have any new scheme, formulate it ready for practice next year. If you have observed any thing new, let us have it, being careful to report exactly what you *did* see: for, as one writer has said, "Men see one thing, and are apt to infer another." Let there be none of this in our work. E. R. ROOT.

EXTRACTED HONEY.

PUTTING IT UP FOR MARKET; HOW A LARGE DEALER AND HONEY-PRODUCER MANAGES IT.

By to-day's mail I send you a small can of honey, put up in the winter of 1882-3. Its exterior is rather rough, it being the last of my stock of that season, and has been handled a good deal as a sample can by which to sell the stock. Is it candied? I put up a considerable part of my product in this style of can, weighing 1, 2, and 3 lbs. respectively. For convenience and expedition in canning honey, I have a coil of block-tin pipe placed in a steam-chest, one end of the pipe protruding from the top of the steam-chest, and reaching to a tank (holding 3 or 4 bbls.), which is placed directly above the steam-chest. The other end of the pipe protrudes from near the bottom of the steam-chest, and to it is attached a small faucet. Now, when ready to go to canning we turn a jet of steam into the chest, or box, in which the pipe is coiled; turn the stop-cock at the bottom of the tank, or top of pipe, to permit the pipe to fill from the tank, and draw off or fill the cans from the small faucet at the bottom of the steam-chest. The honey in passing through the pipe in the steam-box, is heated; one hand draws off the honey, two tanners solder the cans as they are filled, while a hand takes care of the cans as soldered, and labels them.

How is the tank kept supplied? Why, the above work is done in the basement of a plant on a hill-side; the tank is supplied from a heater just above it, which is fitted in the floor of the upper story. This heater will hold 2 or 3 bbls. of honey. The top of it is even with the top of floor. A zinc plate is placed on the floor beside the heater, a barrel of honey is rolled up to the plate, hoops knocked off one end and the head taken out, then the barrel is turned upside down on the zinc plate, the barrel pried off the honey (my honey is always candied solid at this time of year), and the honey swung, or shoved into the heater. A jet of steam is then thrown about the heater; and as the honey melts it

runs through a pipe in the bottom of the heater to the tank below it, which supplies the steam-chest.

As stated above, the building is on a hillside. On the upper side we drive up to the door and unload the honey on a level from the wagon to the floor of the upper story; on the lower side we load honey from the basement—canned, cased, and ready for shipment, into a wagon, without having to elevate it, the bottom of the wagon and basement floor being on a level. Thus, you see, we do the work expeditiously, accurately (damaging no honey by coming in too close contact with fire), and easily. The tinnerns are never given any extra restings—spells waiting for the candied honey to melt.

We put up about 1500 cans a day, working by daylight. During the past three seasons I have made use of the sun evaporator, for the purpose of more thoroughly curing my crop (I extract all my honey). The honey discharges itself from the extractor into a funnel covered with cheese-cloth. It is then conveyed by a short pipe through the wall of the honey-house, and emptied into the evaporator. When thoroughly cured, a pipe, entering the evaporator in its bottom, conducts the honey back through the wall of the building into the basement, and discharges into a large tank, or other storage vessels. The evaporator is placed on the south side of the honey-house, with tin reflector above it. Where I have not a sun evaporator in my apiary I extract none (except as compelled to do sometimes from brood-combs) until fall, but tier my hives up, 3, 4, 5, and even 6 stories high.

Having some time ago read an account of friend Muth's mode of heating and handling honey, and thinking his plan must be very tedious, where so large a quantity is handled, induced me to give you my plan.

A. CHRISTIE.

Smithland, Iowa, Nov. 16, 1885.

I will explain to our friends, that friend Christie probably sells as much extracted honey in small packages as any other one man, unless it is friend Muth, of Cincinnati. While friend Muth makes glass jars his specialty, friend Christie has a special style of tin can, partly described in the above article. I will explain further, by saying that this can is not unlike the ordinary Jones can, as we have called them, except that a tin cover slips on or off at pleasure; and underneath this tin cover is a second top, made of the thinnest kind of taggers' tin, and it is therefore easily cut open with an ordinary penknife; and after this taggers'-tin cover is cut out and thrown away you have a tin box or pail, as the case may be, with a nice-fitting slip-over cover. Below we give a copy of friend Christie's labels as they read on his one-pound honey-package:

PURE HONEY FROM THE APIARIES OF
AUG. CHRISTIE,
SMITHLAND, - IOWA.

Friend C.'s peculiarity in his method of melting candied honey is this: Instead of running steam through a coiled pipe, he runs the honey through the coiled pipe, and the steam is let into the steam-chest surrounding it. I believe there is an advantage in this, because a lower temperature of steam would melt the honey rapidly, and make it flow freely. The sample received was not candied, and I think it quite likely that honey sealed up in this way, when heated to

about the right temperature, would remain in a liquid state until the can is cut open. Although we may not, many of us, go to the expense of just such an apparatus as the above, there are many hints given in the article that will doubtless be a benefit to many of us.

The following is the contents of a circular label on top of the cover. Perhaps we might add, that friend Christie is our largest customer for honey-labels, from which we judge that he sells immense quantities of honey in this way.

This end of this can is simply a slip cover. To open it, cut the label around the edge of this cover, and pull the cover off; then cut out the soft thin end now under the cover, and you have an open can which you can shut and open at pleasure, while using the honey.

A EULOGY UPON SOME OF OUR PROMINENT BEE-KEEPERS.

Well, now, if I did, in a former song,
If I did in *that* do the lion wrong,
I beg his pardon; I'd rather kneel,
Than to be for him a single meal!
But he stands to-day
In proud array—
His fame is fixed and sure.

Here's Jones and Benton—no noble men,
They're marching in the van;
Bring out your heroes, one by one,
And match them if you can.
They marched through many a burning isle,
And swept the eastern seas,
To furnish man and woman kind
The finest race of bees.

And there is Root—"foremost" this Root,
I ne'er can find a rhyme to suit,
Although I start in wild pursuit:
Yet, where is the man with bee repute,
Or any other, that will dispute
That this is a kind and tender Root?

And, lo! afar in summer sky
I see a banner floating high:
And written there in living light
Are words that give the heart delight:
"If all my customers among,
There's any I have done a wrong,
Then let me know, and I will try
My utmost them to satisfy."
'Tis Hayhurst's banner floating high.

For honesty of purpose, sterling worth,
There beats no heart upon this blooming earth
More true and steadfast—none that I would trust
Sooner than Heddon, for I believe him just.

And there is Cook—an honored name,
That stands full high on the roll of fame.
Whether he's tall across, or long and slim,
I also have a "crow to pick" with him.
I'll tell it to you at some other time,
Either in saddest prose or merry rhyme:
How he, from this "vain world" did almost jolt
Your humble servant, with "his little colt."
But there he is—a paragon of men,
A master of the heart, the ear, the pen.

And Mrs. Axtell—there she stands,
Beloved in this and other lands,
A purer faith—a prouder fame,
"Than gathers round Marengo's name."

Another hundred I could name, and more,
That stand full high in apicultural lore.
There's Mrs. Harrison, and Chaddock too,
Might be a fit example unto you.
Cyula Linswik, in her forest home,
And Nellie also, to my memory come.
These names with tenderness I now recall.

These are a few—only a few—
Photographs I present to you.
Sift them and weigh them, one by one.
Humble and poor they all began,—
With head and hands they worked amain.

San Dieguito, Cal.

J. P. ISRAEL.

A MODEL BEE-KEEPERS' ASSOCIATION.

THE EDITOR OF GLEANINGS IS ASKED TO ANSWER SOME QUESTIONS PROPOUNDED BY THE FAYETTE COUNTY (OHIO) B. K. A.

NINE months ago the bee-keepers of our county organized an association, and up to the present time the readers of your worthy journal, except our own members, are in the dark as to what we have and are doing. We started out last February with a membership of 10, and now number 34. We have monthly meetings, holding them around at the homes of the different members, each taking his basket well filled, and having a regular picnic dinner; and with our wives, sons, and daughters, we have a general good time, socially as well as mentally. If you will allow me a little space, I will refer briefly to our last meeting, which was held at the home of Bro. Lewis Haines, Oct. 22d. The day being bright and beautiful, added much to the enjoyment of the occasion. The time till noon, as is our custom, was occupied in looking at some of the outdoor attractions; namely, his hexagonal apiary of Italian bees in the Root chaff hive; also his machinery for manufacturing bee-keepers' supplies; and last, but not least, his beautiful carp-pond, situated near and fed by a never-failing spring. The day being a little cool, we did not get to see any carp; but Mr. H. assured us they were there all the same.

This brings us up to our bountiful feast, of which we all freely partook. After dinner the meeting was called to order by Vice-President Bay, who gave us a brief but appropriate address. There having been no special work assigned to any member, our question-box was opened, and the following questions read and discussed very interestingly:

What is the best mode of wintering bees?

Is it too late to feed for wintering?

What is the best mode of spring management?

Will bees permit a queen and fertile worker to remain in a hive at the same time, and both raise brood?

How would you Italianize an apiary in the spring, without interfering with your crop of honey?

Are bees rearing brood now? if so, is it best for them to rear brood so late in the season?

Is it best to feed our bees sugar syrup, and sell the product for honey? This last question arose from the fact that our market is being supplied now from Columbus with this kind of honey.

An answer to part or all the questions discussed in our last meeting would be very acceptable.

The foregoing questions being very interestingly discussed, the meeting adjourned to meet at the home of J. H. Ferguson, four miles east of Washington C. H., on the Circleville pike, Nov. 19, 1885.

Bloomington, O.

S. R. MORRIS, Sec.

Friend M., I congratulate you on your having got started in such a healthy and inexpensive way of conducting a local bee-keepers' society. With pleasure, I answer, to the best of my ability, the questions propounded, in order:

The best mode of wintering bees must depend on the locality and other circumstances. As a general rule, I would say chaff hives, arranged as described in the A B C book.

It is never too late to feed for wintering

while there is weather warm enough for the bees to fly.

The best mode of spring management must also depend on circumstances. Watch the bees; love them and help them.

Neither Italians nor common bees will, as a rule, permit a fertile worker to remain in a hive while they have a queen; but the Syrians and Cyprians both at times are guilty of this misdemeanor.

To Italianize an apiary in the spring, without interfering with the honey yield to some extent, might be a very difficult matter; but the advantage of Italian blood would, under almost all circumstances, be such that they would catch up, and more too, before the season is over, so in the end your crop of honey would be greater.

Bees will be rearing brood now where the colony has a young queen, where they have been fed, or where they get late forage; and sometimes strong colonies will raise brood in November any way.

It is *never* best to feed bees sugar, and sell the product for honey. Honestly used to be the best policy, and I guess there is no doubt but that it is yet. Dear friends, are you sure that anybody is putting a product on the Columbus market, under the name of honey, that is only sugar fed to bees? This is a serious charge, and we ought to be very careful that we are right before we accuse anybody.

CARNIOLANS AS COMB-BUILDERS.

NOT DISTOSED TO MAKE PROPOLIS; SOMETHING ABOUT BREEDING THEM.

FRIEND ROOT:—I herewith send you a letter that was written to me, which I think gives more information regarding the Carniolan bees than any thing I have seen in any of the bee-journals; and if you think it worthy of a place in GLEANINGS I should be glad to have you publish it.

CHAS. D. DUVAL.

Spencerville, Md., Oct. 20, 1885.

We give place to the letter below:

Mr. C. D. Duval:—

I have raised over 100 Carniolan queens this fall, and find more yellow in the race than I expected, though some queens, whose bees show considerable yellow at first, raise very nice bees when six months or a year old, as their yellow mostly proves to be a reddish band, as Mr. Benton calls it. But I find there are some Carniolans that resemble the cross between them and Italians. The yellow is in drones as well as workers, and in imported stocks as well as home-bred queens. The first queen I sent you was raised from an extra imported queen; but if she is mated pure it must have been with one of those yellow drones, and those yellow drones you will find to be all through the race; but some queens raise much finer-looking ones, and of a more uniform color, than others.

It is much harder to get good specimens of this race than Italians, and some have so much yellow in markings, that, if we raise them for sale, we shall have to test them and price them according to grade and markings of bees. The most reliable test for some is, that pure Carniolans carry no propolis, but they will make use of it if there is any on frames. I could mail you a piece of duck

cloth for reference, that has covered frames all season. I have two queens that met hybrid drones, and one hybrid queen and several Italian queens mated with Carniolan drones. These queens were raised in the fore part of the season, for experiments. The ones that have black blood in are smaller, with very little down on some, and a rather bad disposition to sting, which the Carniolans have not, as I have not had a smoker lighted; except when uniting them, for three months, or since I got stocked up with Carniolans, and have got but a few stings.

The Carniolans are very hardy, and are the best comb-builders I ever had, and make the nicest section honey. They protect their hives as well as Italians, as far as I am able to judge. I have some Carniolan swarms that built more comb in August and September than the best Italian stands did in the honey season. They also work on red clover as well, if not better, than Italians. But you will find them to swarm more, and some queens raise very poorly marked bees. In raising queens I have much better results after going over my bees the second time, and excluding all queens and drones that had many yellow ones among them. In breeding them I would buy some drones from darkest queens, if they are uniform in color, and also breed from darkest queens. The thing we want is a black underground, or scales, with heavy stripes of down on workers; and queens that raise these without yellow ones among them are hard to get, but they are as fine-looking bees as the best Italians. It takes the very best queens of this race to have good results in raising them; and even then some are not fit to send, as folks will call them hybrids, when pure.

H. F. SHANNON.

Spring Hill, Ind., Oct. 12, 1885.

And so, friend S., you would endeavor to breed out the yellow bands from the Carniolans, would you? It seems to me this is going to complicate matters quite a little. If it is really as you say, that the Carniolans are disposed to show yellow bands, even when not crossed with Italians, wouldn't this indicate that the race itself is a cross? and how are we to know when they have become crossed with Italians, and when they have not? I am glad to hear of the good report you make in regard to them. If it is true, that they collect less propolis, this will be quite an acquisition, and we will take particular pains to notice them in our own apiary next year.

REVERSING COMBS, ETC.

GOOD REPORT OF THE HONEY SEASON.

I THINK that, as others have something to say in GLEANINGS in regard to reversible frames, I have the same privilege. Like all new things, there is more or less doubt; but there is no doubt in my mind as to their utility. I tried a few last season, simply by sawing off the end-bars and driving a long wire nail to take its place, hoping in time something would come along for the much-needed purpose of a perfect reversible frame, and all the while I have been working for it. I tried quite a number, especially the wire you have. I liked that best of all, on some accounts. One great objection is, when we desire to run stays down between the frames, the side wires are much in the

way; and, too, unless they are perfect, the frames will easily hang out of true, and one must have a very nice tool to clinch them to the end-bars.

As we are all a little selfish, I am going to tell you I have made a reversible frame I like best of all. I send you a sample with this. The wire is right in the center of the end of frame, so it can not but hang true, and the frames do move so easy, and no job to reverse the wire! It takes only about half the wire that yours does. To be sure, it takes 3 half-inch screws to an end of frame, but they cost only one cent per dozen, and you see these wires can be used equally well on side-storing frames or on a full set in upper story. I have made a machine to make them on, that cost about 50 cts., aside from a vise that I use. I do not use the spring wire, but the common, as it works much better, and is good otherwise.

SOME ADDITIONAL ADVANTAGES OF REVERSIBLE FRAMES.

I have such a love for reversing, that I shall use such frames, if for nothing but to fill out the bottom of the combs. But there need not be the usual space, if the fdn. is set within $\frac{1}{8}$ inch from the bottom-bar—no matter about a little space at top; that will be all filled. I used to set it up close to the top; and where it was $\frac{1}{2}$ inch too narrow to fill the frame, the space was always left. But the thought occurred to me, that it would work to leave the space above, which is very plain—don't you see? I know that, by having full combs, it takes quite a number less in a certain number of hives; and, too, the bees can reach all the comb quicker, and they are so much stronger, also. By reversing and extracting I can run a queen on seven frames that without would need 8; and how much better the bees take to the sections! I also find that it pays to use full starters in sections, and I learned from W. H. Norton that the starters, to work best, should be cut about $\frac{1}{4}$ inch narrower at the bottom than at the top, and I find it much less work to put such into the boxes, as they do not catch on the sides.

SEPARATORS.

I have used separators wholly this season, and must say I can never do without them, and I have a case that I can use them on or not, and can use a few or more boxes, narrow or wide. I can take out a full box, and replace one with fdn., and it will be filled and no bulging, which otherwise it would be.

I think I have learned one way to foretell when a queen will be killed. When from any cause a queen goes about with her wings up as if she were about to fly, and drags herself along, they are about sure to be killed; at least, I had two Syrian queens and one Italian thus this season. I presume there is some disease that causes her to appear so.

This has been the best season here ever known, and such white goldenrod honey I never saw. I had, I think, 75 lbs. brought in in seven days by one colony (of the best late honey). I have my bees all fixed for winter, with about one-half natural stores, with racks over the frames for $\frac{1}{2}$ -inch passage, and they are mostly on only five frames, and are strong in bees. I have on more warm packing than I used to, for I believe nature is something to go by, as it says, "Stop all upward escapes," and mine that had the most packing last winter came out the best, and ate the least. They are all in chaff hives, and I use a good large bran-sack of leaves over all the cloths, etc.

I am standing on my tiptoes, awaiting the deci-

sion of those bee lawsuits, but I do not fear much, for we must have bees as well as sheep or grapes, and neither are harmed by them. As I grow all sorts of fruits, I have no selfish ends in view.

No. Auburn, Me., Oct., 1885. E. P. CHURCHILL.

Friend C., your reversing device is all right, only that the frames hang on a single bearing. This has been submitted a great many times, and such frames have been used for a time. The objections are, that if you move the hive they swing like a pendulum; and if one side of the comb is loaded more with brood, pollen, or honey, than the other, it throws it to one side. It is true, you can have spacing-strips at the bottom; but then the top must always come in just such a place, and then we have frames at fixed distances again. We thank you for your report of reversible frames in general, and especially for the important facts you bring to light. If you can make seven frames hold as much brood as eight do ordinarily, and thus compel the bees to put their surplus into sections, it will certainly be worth while.—I have often noticed the peculiarity you mention, of queens going about with their wings partly spread; and, so far as I can remember, I have always found such queens faulty in some respects, sooner or later. I do not know that the matter has ever before been in print; but it may be well to warn the brethren, that when a queen carries her wings thus we have good reason to suspect she will not amount to much. Queens, after having been shipped long distances, sometimes show this peculiarity. In regard to the quantity of packing to put over your bees, if you use forest-leaves in a sack, I, too, would say, the more the better; for forest-leaves can not well obstruct ventilation, any way.

A NATURAL CAVE FOR BEES.

HONEY SEASON IN TEXAS.

AT the left of my front yard, a path winds down to a cave some 25 feet below the level, whose cavernous mouth is an arc of 60 paces in front, and would store 10 times as many hives as I have, if needed for winter quarters. Evergreen live-oaks, heavily hung with long gray Spanish moss, with undergrowth of laurel and cedars, cactus villages, algeritas, etc., make a nice mat just over the cave. Right back of our lot is a reservoir, stocked with fine carp, a little over a year old, and over a foot long; and although 12 feet deep, you can see every thing in it and on the bottom, as through glass. Food carp need no feeding here, for its waters, taken from the monstrous spring of 8 acres, grow quite fast the same aquatic plants and grasses that fill the "river head," and it takes a great many carp to keep them down. I think I have the most romantic spot within half a mile of the court-house. There are many fine buildings along the heights. My neighbors (but I refrain from making a letter of length, that perhaps would not interest you), I only wish you could call and see for yourself. Our Texas Chautauqua Literary Society and Summer Institute is also on this height, with our almost boundless view of the prairies.

I ought to say, our many hundreds of Simplicity hives about this place are as overloaded with honey now (although extracted clean in July), as at any time this year. Many are extracting heavily now, and bringing them to one story high. Many new queens are just beginning to lay. I had a fine one hatch to-day, in a full hive. The weather is fine, crops fine, brood heavy yet, and honey and pollen coming in to do the work. The dengue fever has given everybody through here a shake-up.

CARP, AND THEIR UTILITY IN KEEPING DOWN WEEDS.

I wish some enterprising man would dare to come and go into carp-raising, with three ponds on the slope from the reservoir exactly suited to it. I can furnish the ground, and the water is the overflow of the reservoir, always 72", summer and winter. Until carp were growing in there it was often necessary to rake out the masses of spontaneous growth. Now it is gaining on them, and nearly a foot deep on the bottom. I will tell you of Mr. Mitchel's fountain and tank of the hydrant water. He put in some breeding carp where cresses and water-grass were filling up his pond as fast as he could get time to take it out. They grew to great size, and kept things in check. He put brush all around in the water to facilitate laying, etc. This became a mass of glittering verdure, reminding one of a cypress swamp in the Yazoo-River bottoms, densely hung with moss. Well, after the young appeared in thousands, and began to grow, they soon picked the brush clean, and kept nipping the germs, and showing their shiny sides all through it, and they grow like pigs. The large ones are 2 years old and about 23 inches long, 8-pounds.

San Marcos, Texas, Nov. 1, 1885. A. W. BRYAN.

Why, friend B., it seems to me that you folks down there in Texas ought to be happy with all these advantages, and I expect to hear that you individually are now going to settle down and make the most of these advantages, instead of traveling about from one place to another, as you have done for so many years. I can readily understand how a lot of carp may be able to pasture off the weeds and water-plants that fill up your lakes and rivers.

SHIPPING BEES FROM THE SOUTH.

FRIEND MASON GIVES SOME VALUABLE FACTS FROM EXPERIENCE.

ON page 732, Nov. 1, is an article from L. W. Gray, and your comments, which interest me, as we are always short of bees in Maine in spring. I have done quite a large business in shipping bees from the South for the last ten years. I have received bees from more than a dozen of as careful bee-keepers as there are in the South. I have had shipped to me from one pound of bees to full colonies, from April to July, and even August. While some lots came in fine condition, others came all dead, without any apparent cause, packed precisely the same; and while it is a pleasant and profitable business to both the shipper and receiver when a lot goes all right, the next lot, perhaps, is received with a heavy express bill, all dead, or nearly so, which makes the business unprofitable and unpleasant for both the parties. I am satisfied, on the whole, that it is unprofitable to ship bees by rail, where they will be on the road

over four or five days. I find that, where they are more than three or four days in transit, they usually destroy all unsealed brood.

I had one lot of bees the past season from Louisiana. These came by water to New York, and were seven days on the road to New York; then they were sent by freight to Mechanic Falls, Me., which took three days. These bees were in shipping-boxes, on ten L. frames. An opening one inch wide, clear across the bottom, was covered with wire cloth. A 1½-inch hole was made in each end and side, near the bottom, and a 4-inch chamber above the tops of the frames, open at both ends, which was covered with wire cloth; a ½-inch-thick cover had an inch hole in its center; over this hole was tacked a ball of burlap as large as your two fists. This cover was nailed down on burlap, and water poured into this hole, and I have no doubt the captain had instructions to water those bees, and also parties in New York, who see to the transfer of them; at any rate, they arrived here the 11th day after shipment, and there was not half a wine-glassful of dead bees per hive, and the hives were as crowded with bees as I ever saw one that was ready to swarm, and two actually did swarm the next day after they arrived, in regular order, leaving queen-cells all ready to hatch.

I like your idea as to a party being located at some central place, and receiving bees, and letting them have a fly. After they are all right they will stand a two to four days' trip by freight nicely, and come to the purchaser in good order, and reasonably, too, as the expense by water is extremely low. The only question would be, how much this middle-man's services would add to the cost.

Mechanic Falls, Me., Nov. 6, 1885. J. B. MASON.

Friend M., we are very much obliged indeed for your report, showing that what I suggested has actually been put in practice; and from the testimony you give, I should say that this matter of shipping by water should certainly be more fully developed.—The arrangement you mention, for giving the bees water, is also quite an ingenious idea.—So the bees really made preparations to swarm on the way, and did swarm immediately after. Now, then, where is a bee-friend on the sea-coast, who can act as a middle-man for us?

AN A B C SCHOLAR'S UPS AND DOWNS.

HOW HE AT LAST SUCCEEDED; FROM 7 TO 40, AND 1028 LBS. OF HONEY.

THREE years ago I started at about the foot of the A B C class. I thought I possessed more knowledge than I really did. I bought 8 stands of black bees in March, 1883; in June

I had three left. Some swarmed out, and some died. I investigated a little and found nice-nests in the hives, from the size of a tin cup up to the size of a hat. The trouble was, there were but few bees and less honey when I bought them. I learned one lesson then.

A GOOD WORD FOR CYPRIANS.

I had three left in American hives. I watched them closely. They did not swarm that summer. On the 10th day of July, 1885, a swarm of pure Cyprians came and made application for a hive, and, of course, I gratified them. I gave them a hive with old combs. They cast a good swarm the 11th

of August, and a small one the 24th. The last one died in the winter. In the spring I had 2 Cyprians and 3 blacks. The Cyprians increased to 11, and made 375 pounds of comb honey; the blacks did not increase any, and made 125 lbs. I will cut a long story short by saying, last fall I had 23 stands. This spring I had 7. Nearly at the foot of the class again, or, more properly speaking, a fit subject for Blasted Hopes. Not much. My old Cyprian queen came through all right, cast a large swarm May 21st. May 31st another, and June 1st another. The old queen's wings were perfect, but she was so large and heavy she could not fly. From that one stand of Cyprians I increased to 16, and from the 7 I increased to 40. Now take especial notice, they were all natural swarms. You would naturally inquire, "How about the honey?" I took 1028 lbs., all comb honey, in one-pound sections. How is that for Iowa? All but 150 lbs. was gathered after Aug. 1st.

We do not get much honey here yet from white clover, but it is getting a good start. I did not get much from basswood this season. The bees used it in brood-rearing. The most of our honey was gathered from a weed growing in the corn-fields, called by several names, such as smartweed, heart's-ease, and black-heart. The honey is just as white as white-clover honey, and good enough for any one.

ALBERT MCCAY.

East Nodaway, Iowa, Nov. 13, 1885.

THE OTHER SIDE OF BEE-KEEPING.

Or, Rather, a Duplicate of Last Year.

HOW BEE-KEEPING IS LIKE FISHING.

I WENT into winter quarters with 115 colonies. The first of March I had lost two or three colonies, but the most of my colonies were greatly reduced in strength. I thought they would soon build up, but the spring was cold and backward, and brood-rearing was two months later than usual. For the first time, I got a taste of spring dwindling. The first of May my 115 counted 92. The cause of the dwindling was apparent—loss of bees, and backward spring. Old bees died off faster than young ones were hatched. I sold 6 colonies, which left me 86, and transferred 12 on shares, which gave me 92 to commence the season with. I increased artificially to 104.

We had a fair crop of white and alsike clover. The bees got just enough honey from it to check robbing. Linn bloom was never better. The bees got enough honey from that to make them reasonably good natured for eight or ten days, but not sufficient to swarm. August came in cold, and it would have paid a good per cent to have fed them all through that month.

I was in Blasted Hopes last year (that is the name that suits me; when spring came I thought I was out, head and shoulders; but I settled back for five months, just my ears sticking out. Spanish needle came in the first of September, and there was an unusual amount of heart's-ease honey, which began coming in the 2d of September. I put on my first sections that day. Bees got in a good humor, and I felt a little better, and they and I worked together just as if we had always been good friends.

BEE BUSINESS LIKE FISHING.

You can talk to me about mussing with beeswax. Any thing but working with robber-bees. I think mine out in the fall till I don't have many to feed.

They don't sting me much, but they crowd me out, and beat me up in the morning, and can see later at night. There is something in the bee business that reminds me of fishing with a hook. I used to fish half a day without a bite, when I would think of quitting. I would then think, "May be a great whopper is just ready to take hold." When I get a poor crop (which I am sure to do), I think next year I shall "strike oil." Next year some little thing is wrong—perhaps the wind is from the east (as it usually is), but I think the next year will be all right. Next year it is a little too cold, but the next year will certainly be the year. But with all these little things, I like it as well as fishing, and I am spoiled for any thing else. If I don't succeed with bees, I am "gone up," sure.

From my house apiary, 80 spring count, I got an average of 22½ lbs., or 1335 lbs. extracted, 490 comb. Total, 1825 lbs.

From an apiary of 5 on shares, 315 lbs.; my share, 157 lbs.

From my River Apiary, black bees, 12 colonies, average 5¼ lbs., 68 lbs. Total, 2050 lbs.

REFUS ROBINSON.

Laclede, Fayette Co., Ill., Nov., 1885.

Friend R., you say you had quite a fair crop of alsike and white clover, and that linn was never better. Now, if the results per colony you mention are the best you got from all these sources, I should be inclined to call your locality a rather poor one. A good flow from linn alone ought to give at least 100 lbs. per colony, in an apiary of not over fifty colonies.

GIVING A LAYING QUEEN TO A COLONY HAVING JUST CAST A SWARM.

IS THE PLAN ADVISABLE?

ON page 739 of GLEANINGS for Nov. 1, L. W. Gray asks questions for Doolittle to answer, which I will try to do. In the partial answer the editor gives, I see he does not comprehend the question asked, only to a limited extent. The question *mainly* does not refer to the safe introduction of queens, although that is indirectly touched upon, but to the erroneous idea (as I consider it) which has been advanced so many times, that there is a great gain made by giving a colony which has just cast a swarm a laying queen, instead of allowing it to perfect a queen from the queen-cells left after the swarm has issued. As it must of necessity take from 15 to 20 days for the embryo queen which is left in one of these cells to get to laying, we have been told that the bee-keeper who wishes to secure the best results from his bees should have a laying queen ready to give each old colony as soon as they swarm, as the time lost to them, by rearing a queen, is equivalent to a swarm of bees. Being eager to know for myself all the plans which would give the best results, I have experimented largely; and the truth of the statement, that the time lost to the bees by rearing a queen in natural swarming is equivalent to a swarm of bees, is the first reason it has not proven a success. If it were bees I were after, the case would be different. With me, white clover yields enough honey to keep the bees breeding nicely, and prepares them so that they swarm mainly from June 20 to July 5. Our honey harvest is from basswood, which blooms from July 10 to 16. Now, all who are familiar with nat-

ural swarming know that the bees are comparatively few in numbers in the spring, and increase by the rapidly increasing brood produced by the queen, which, in due time, hatch into bees, until a swarm is the result. By giving a laying queen to a colony immediately after it has cast a swarm, we bring about the same result (swarming) as before, for we place the bees in the same condition. The only difference is, that, having plenty of brood, they build up quicker, and are prepared to swarm in a shorter time. As this second swarming, brought about by giving the laying queen, comes right in our basswood honey harvest, it cuts off the surplus honey; for it is well known that bees, having the swarming fever, do little or no work in the section boxes; and if allowed to swarm, the object we have sought after (section honey) is beyond our reach.

REASONS FOR PREFERRING A YOUNG QUEEN.

Now let us look at how the same colony would work had we not given the bees a laying queen. Eight days after the swarm has issued, the first young queen will have emerged from her cell, as a rule, when the apiarist should remove all the other queen-cells from the hive, so that second swarming is entirely prevented. In 8 or 10 days more our young queen is ready to lay, which is about the time the basswood begins to yield honey largely. During this period, between the time the swarm issued and the young queen commences to lay, the bees, not having any young brood to nurse for the last half of the time, consume but little honey; hence, as fast as the young bees emerge from the cells they are filled with honey; for bees not having a laying queen seldom build comb in the sections. Thus, when the young queen is ready to lay she finds every available cell stored with well-ripened honey. At this point the instinct of the bees teaches them that they must have brood, or they will soon cease to exist as a colony, and a general rush is made for the sections; the honey from below is carried above, so as to give the queen room, and in a week we have, as a result, the sections nearly filled with honey. I have often had such colonies complete 60 pounds of section honey in from 8 to 12 days, while those to which I had given the laying queen immediately after swarming, did little else than swarm during the same time. Bear in mind, we are talking about producing comb honey, not extracted. Different locations may give different results; still, I think that nearly all sections give a large flow of honey at a certain period during the season, rather than a steady continuous honey harvest the whole season. To such sections these remarks are especially applicable.

My second reason is, that after basswood we have a honey dearth, hence the bees from the introduced queen are of no value, but, on the contrary, become consumers. On an average it takes 21 days from the time the egg is laid, to the perfect bee ready to emerge from the cell. Then, if the colony is in a normal condition, this bee does not commence labor in the field till 16 days old; hence, the eggs for the honey-gathering bees must be deposited in the cell 37 days before the honey harvest ends, or else they are of no value as honey-producers. As the basswood is all gone before the eggs of the introduced queen become honey-producing bees, and as the larger part of them die of old age before buckwheat and fall flowers yield honey, it will be seen that a great gain is made by letting each old

colony, having cast a swarm, rear their own queen, for thereby we save the expensive feeding of the larvæ, which are to become expensive consumers of the honey of the hive. The chances are, also, that when the colony rears its own queen they will be stocked with younger bees for wintering in November than where a queen was introduced immediately after swarming.

The one point worth knowing above all others in bee-keeping, is a thorough knowledge of the location we are in, as to its honey resources, and then getting the largest amount of bees possible at that or those times to gather honey, having just as few at all other times as is consistent with the accomplishing of this object. If all who read this article will study their location, and then rear the bees in reference to that location, I think they will find their bees will do as well as their more successful neighbors.

G. M. DOOLITTLE.

Borodino, N. Y., Nov. 16, 1885.

Friend D., under the circumstances, very likely you are right; but some way I do not like the idea of ever, under any circumstances, discouraging the production of brood. I presume this, of course, comes about because we have always been in the habit of selling bees, and we sell them almost every month in the year, and therefore they will never be dead property. I can not remember that I ever saw too much brood in a hive to please me; neither have I seen a hive containing too many bees. There is another peculiarity in our location. Bees, as a rule, never swarm after about the middle of July, and therefore we have nothing to fear from the excessive swarming you speak of during the basswood bloom. Where one is working exclusively for comb honey, in a locality like yours, there may be reasons for preferring to have brood-rearing stop for a week or two; but I would always extract when there is an advantage to be gained by extracting.

THE NORTH AMERICAN BEE-KEEPERS' SOCIETY.

FULL PARTICULARS IN REGARD TO IT.

WE extract the following from the *American Bee Journal*:

This society will hold its 16th annual convention on Dec. 8, 9, and 10, 1885, at Detroit, Mich. The hall in which the meeting will be held is known as the "Red Men's Wigwam," and is located at 63 Michigan Avenue, one block west of the City Hall. Just across the street from the "Red Men's Wigwam" is the Antisdel House, which will be the hotel at which the Society will make its headquarters. The regular rates at this hotel are \$2.00 per day, but they have been reduced to \$1.25 per day to those attending the convention. There will be reduced rates on all Michigan railroads, also as far east as Buffalo, as far west as Chicago, and as far south as Toledo. Efforts are being made to secure reduced rates to still further points, but at present the prospects of success are not very promising. No certificates will be sent out until about Dec. 1; but all who expect to attend should write to the Secretary at once, and certificates will be sent out as soon as they are ready.

W. Z. HUTCHINSON, Sec.,
Rogersville, Mich.

RAILROAD CERTIFICATES FOR THE CONVENTION.

As many do not fully understand the use of the certificates to secure the benefits of reduced rates, I will try to explain their use.

It makes no difference whether you belong to the North American Bee-keepers' Society, or any other society, or ever expect to, if you wish to go to Detroit, Mich., to attend the annual meeting of the several bee-keepers' societies to be held at that place on Dec. 8, 9, and 10, you will simply write to W. Z. Hutchinson, Rogersville, Mich., asking for as many railroad certificates as you can use. Mr. H. will book your name and the number of certificates you want, and as soon as he obtains the certificates from the railroad companies, which will be about Dec. 1, he will mail them to you. You will fill out the blank, and when you buy your ticket have the railroad agent fill out his part. If you can not buy a through ticket to Detroit, buy one for as far as you can, and when you procure a new ticket have the agent indorse, on the face of the certificate, that he sold you one full-rate ticket from that place to as far as you get your ticket. You may be obliged to get tickets at several places, but always have the agent certify that he sold you a full-rate ticket.

When you arrive at Detroit, present your certificates to Mr. Hutchinson, and he will fill out the blank left for that purpose, certifying that you were in attendance at the above-mentioned meeting. Then, on presentation of your certificate properly filled out, you will be able to procure a return ticket by paying one-third the regular fare, thus saving to you two-thirds of the regular fare one way.

This is a great reduction, and will enable many to attend at Detroit who would feel that it would cost too much to go. Then with the reduced rates at the hotel it will make your expenses very low. Your committee is still at work trying to make it pleasant for you when you arrive in Detroit. We hope you will all come, and make this meeting one long to be remembered by those present. A large sample room at the hotel has been placed at our disposal; where you can have every facility to show any thing new or of interest to the Society.

Let every bee-keeper canvass his neighborhood, and find how many will attend, then send to W. Z. Hutchinson for certificates as soon as possible, so that he will know how many to apply for.

Clinton, Mich.

H. D. CUTTING.

PROGRAMME.

FIRST DAY.

TUESDAY FORENOON SESSION.—10 a. m.—Convention called to order.—Address of Welcome, by Edwin Willets, President of the Michigan Agricultural College.—Response by the President, L. C. Root.—Calling the roll of members of last year, payment of annual dues, reception of new members, and distribution of badges.—Reading the minutes of the last meeting.—Reports of the Treasurer and Secretary.—Announcements.—Miscellaneous business.

AFTERNOON SESSION.—2 p. m.—Announcements.—Annual address of the President.—Miscellaneous business.—"Production of Comb Honey," G. M. Doolittle, Borodino, N. Y.—"Production of Extracted Honey," Charles Dadant, Hamilton, Ill.—"Marketing Honey," C. F. Muth, Cincinnati, O.

EVENING SESSION.—7:30 p. m.—Announcements.—Miscellaneous business.—Discussion of questions that have accumulated in the question-box during the day.

SECOND DAY.

WEDNESDAY MORNING SESSION.—9 a. m.—Announcements.—Miscellaneous business.—"Bee-Pasturage," Thos. G. Newman, Chicago, Ill.—"Selling and shipping Bees by the Pound," E. M. Hayhurst, Kansas City, Mo.—Selection of place for holding next convention, and election of officers.

AFTERNOON SESSION.—2 p. m.—Announcements.—Miscellaneous business.—"Excellence or Cheapness—Which?" A. I. Root, Medina, O.—"Comb Foundation," John Vandervort, Laceyville, Pa.—"Bee-Keeping as a Business," Dr. C. C. Miller, Marengo, Illinois.

EVENING SESSION.—7:30 p. m.—Announcements.—Miscellaneous business.—Discussion of questions in the question-box.

THIRD DAY.

THURSDAY MORNING SESSION.—9 a. m.—Announcements.—Miscellaneous business.—"Reversing Combs," James Heddon, Dowagiac, Mich.—"The Pollen Theory," Prof. A. J. Cook, Agricultural College, Mich.

AFTERNOON SESSION.—2 p. m.—Announcements.—Miscellaneous business.—“Wintering Bees,” Ira Barber, DeKalb Junction, N. Y.—“Different Races of Bees,” D. A. Jones, Beeton, Ont.—Adjournment.
W. Z. HUTCHINSON, Sec.

FALSE STATEMENTS IN REGARD TO THE HONEY BUSINESS OF OUR COUNTRY.

As a protection to our bee-keeping population, we propose in this department to publish the names of newspapers that persist in publishing false statements in regard to the purity of honey which we as bee-keepers put on the market.

FALSE STATEMENTS IN THE ENGLISH PAPERS, IN REGARD TO THE HONEY BUSINESS.

AFTER reading GLEANINGS for Nov. 1, and seeing the many clippings from papers about bogus honey, I thought I would send you one, especially after reading about your exporting honey to England, and the man saying they would not require more American honey, etc. The inclosed slip is taken from the *Newcastle-on-Tyne Chronicle*, England (my native city). After reading it and your paper, I wondered if the one had any connection with the other. JOHN LILLIE.

Vincennes, Ind., Nov. 14, 1885.

ARTIFICIAL HONEY.

One of the latest American novelties is artificial honey—that is, honey adulterated with syrup manufactured from maize, the method being as yet a secret. Experiments on the subject show, however, that if wheat or maize starch (not potato starch) be treated with oxalic acid, or any other powerful organic acid, a syrup is produced which in a certain concentration, and after standing two or three weeks, exactly resembles in taste and appearance old honey.

Thank you, friend L., but I do not believe our English correspondent had adulterated honey in mind when he wrote what he did. The extract which you send us was probably brought out by what our friends had seen in the American papers. We would suggest to them, that if they want to be fair to the friends over here they will tell what proofs they have, that our corn syrup has ever been brought over from America to be sold as honey. Have the packages analyzed, and find out where they come from. Let us root out the fraud, no matter what it costs.

FEEDING BEES SUGAR SYRUP, AND SELLING IT FOR HONEY.

Below is part of a clipping from the *Toledo Blade*:

Late in the fall, in warm days, feed each swarm until it has ample stores to last till we can commence to feed in spring.

Now, what to feed. In preparing sugar syrup to feed bees, use the best coffee crushed sugar (not granulated, as that will turn back to sugar in the cells), such as is used for cooking purposes. If some of this is stored in the boxes with honey collected from flowers, it will in no way decrease its value, or impair the flavor of the honey.

Feeding bees judiciously is a benefit to the consumer as well as the producer. It increases the product, makes honey cheaper, and does not impair the quality. By increasing the quantity produced by a swarm of bees, it increases the profit of that swarm in dollars and cents; by increasing the quantity of honey in the market it reduces prices per pound, and brings it within reach of all.

Nearly every family with a garden might keep a few swarms of bees with good profit. In commencing, get the best bees in the best hives, and manage them on common-sense principles.

MRS. LIZZIE E. COLTON.

The italics in the above extract are ours. There is no question but that the editors of

the *Blade* meant to credit it to Mrs. Cotton. The letter L was probably a typographical mistake, and her teaching accords exactly with what she says in her book. Of course, she does not directly recommend feeding sugar on a large scale to get nice comb honey, but she very plainly suggests that it may be done, and that nobody will be harmed by it. We call upon the editors of the *Toledo Blade* to recognize the fact that they are encouraging a fraud and imposition upon the public; and we hope that when their attention is called to it they will as publicly protest. We would also remind them that they are allowing one who has been for years published as a fraud, to use their pages as an indirect means of advertising her fraud.

From the *Apiarian* department of the *Rural New-Yorker*, of a late date, we clip the following:

THE ONE THING THAT FRAUD CAN NOT COUNTERFEIT.

I am surprised to note the following response to an inquiry in the *Farmers' Club* of a late *Rural New-Yorker*: “It is probably true, that men, without the aid of bees, now make and sell comb honey in which neither wax nor honey is used; that the comb is made of paraffine, and filled with a substance like honey.” Now, Mr. Editor, I wish to say that the above is not only not probably true, but that it is utterly absurd, mischievously false, and entirely impossible. No such thing has ever been done, and it is very certain that no such thing ever can be done. Only Nature’s deft and delicate fingers can fashion the beautiful comb honey. Comb honey is one thing that fraud can not counterfeit. Whoever purchases the beautiful, white, incomparable comb honey, may be sure that he has Nature’s product, pure and genuine.

A few years ago, Prof. H. W. Wiley, now Chemist of the Agricultural Department at Washington, published an interesting article on sugar, in the *Popular Science Monthly*, in which he made the above statement, apparently in all soberness. Afterward, when Prof. Wiley was called upon for proof of what was palpably absurd to any one who knows of the real nature of comb honey—a substance which is clearly inimitable—he replied: “I only said it as a scientific pleasantry.” This statement was apparently as candid and earnest as any part of the article, and so was widely copied by the press of the country, and now, like all untruthful statements, it is, ever and anon, lifting its ungracious head, only to do mischief.

Comb honey owes its excellence to its very delicate structure. The cell walls of the comb are only 1-140 of an inch in thickness, and thus the delicate wax breaks up in the mouth almost without any extraneous force, and just serves to reduce or dilute the exquisite honey, and so becomes one of the most coveted articles of diet. It seems almost like sacrilege to say that such an incomparable article can be made artificially. As before stated, it is utterly impossible; never has been done, and never can be done. I hope, Mr. Editor, you will publish this correction at once, and that the many papers that have spread the error may be equally quick to fling out the correction; even then much wrong will be done; for, as we all know, falsehood will traverse the globe while truth is hitching up her horse.

Agricultural Coll., Mich.

PROF. A. J. COOK.

Many, many thanks, friend Cook for having struck so effective a blow, at just the right time and in the right place; but it does really seem to me as if the editors of the *Rural New-Yorker* should have added an editorial note, or made some little apology, for their unwise and inconsiderate statement. I want to emphasize Prof. Cook’s words where he says:

No such thing has ever been done, and it is very certain that no such thing ever can be done.

And:

Falsehood will traverse the globe while truth is hitching up her horse.

The trouble is this: When such a wonderful statement comes out in the papers, everybody reads it, holds up the hands in wonder, and every paper copies it. When the falsehood is corrected, however, it is a matter of but little interest to any one, and so nobody cares to read it, and therefore the editors let it drop as quietly as possible; for it is a little humiliating for an editor to admit that he publicly exposed his ignorance. But I tell you, my friends, an editor will make more money in the long run, and get a larger subscription, by being strictly honest, and coming right down to the bed-rock of truth, whenever the cause demands it. The world will stand by a man who, with truthful candor, exposes his mistakes, in a way they will by no means do, if the man is too proud to stoop to undo the mischief he has, may be unconsciously, made. We thank the editors of the *Rural New-Yorker*, however, for what they have done.

AN A B C SCHOLAR'S EXPERIENCE.

FINDING QUEENS; CHAFF PACKING.

NOW that the season is over, and the bees snugly tucked up in their winter blankets of chaff, I feel like summing up results, and reporting to our preceptor. I imagine you holding a kind of inquiry meeting of the A B C class; and having had "sp'ience," I feel like "speakin' right out in meetin'."

I went into winter quarters last year with ten colonies of blacks and one Italian. All came out in the spring with bees in; but on Easter Sunday one swarmed out and went in with another colony, leaving me ten, two of which were pretty weak; but by dint of feeding and building up I got them all to storing surplus on the white clover. Then came the (to me) most embarrassing work: i. e., raising queens, and Italianizing. I approached the first stand for this purpose, with a good deal of trepidation and misgivings, somewhat as a young man ventures to see his best girl for the first time; for although I have had a passing acquaintance with bees all my life I had only once before had an interview, and that very brief, with her majesty the queen. Still, I have succeeded in increasing my ten colonies to 24, good and strong; raising and introducing, for myself and neighbors, 35 queens, with not one laying queen lost in introducing, although I lost several virgin queens in various ways, besides getting a surplus of 1000 lbs. of comb and extracted honey. So much for one of the A B C's. Can any of the W Y Z's beat it?

FIRST: HOW TO FIND BLACK QUEENS.

I have found a way of finding the queen in ten minutes, without staring your eyes out, and, I almost said, to an absolute certainty—at least, it has not failed in a single instance of half a dozen trials. My neighbor, A. C. Moore, is the inventor of the scheme. We help one another a good deal in bee-work, and mutually profit by one another's experience. I had three or four hives I had worn myself out on, trying to find the black queens, and get them out. He had had pretty good success with his own, and proffered to help me. After spending the whole of a hot afternoon in August, without

finding a single queen, most of his conceit oozed out along with the sweat of his face. Next day he tried one of his own, with the same result, when he thought of fastening a perforated zinc honey-board into the bottom of a Simplicity story, in such a way as to sit down over the brood frames, leaving no way of egress around it. Into this he lifted all the frames and bees, and also brushing in all bees from brood-box and bottom-board; then putting bottom-board and brood-box in place, he took up brood-combs one by one, and brushed all bees back into the Simplicity story, with zinc in bottom, and placing frames in brood-box, again. As soon as all were out he put the cover on the box that had the bees in it, and set it on the brood-chamber. Thus he left them 20 minutes or so; and on taking up the cover he found all the bees had gone down through the honey-board into the brood-chamber, except the queen and a few retainers, among which she was easily seen and caught; but when I tried it

THE BEES DIDN'T GO DOWN

of themselves; so instead of the cover I drew over them some mosquito netting and smoked them down. At first I had my doubts, thinking the queen could get through the perforations if she would try seriously; but after watching a not very large queen try for several minutes, I concluded it would be a very small one that did. Of course, the queen might fly up into the air, as many of the bees do, and escape the trap; but so far they never have.

SECOND: A SIMPLICITY BODY FILLED WITH CHAFF.

Instead of chaff cushions I cut a piece of burlap, an inch and a half larger all round than the outside of Simplicity cover. I then take a lath and cut two pieces, one inch shorter than inside length of Simplicity box, and two of them one inch shorter than the inside width of box. To these strips I tack the edges of the burlap—the long edges to long strips, short ones to short strips. Of course, the edges of burlap are much longer than the strips of lath. The excess is equally divided at the ends. I use a frame of lath over the frames similar to Hill's device. After this is put on, and the top box set in place, I put the burlap, with strips to it, down inside of the top box, turn the strips up edgewise against the sides of the box, and with a single lath-nail in each strip, tack them to the lower edge of top box. The ends of the strips come now almost together, leaving just room for the corners of the burlap to gather between the ends of the lath, and leaving the cloth loose enough to drop down over my Hill device, and be pressed down on the frames and cushions at ends and sides. I then fill the upper box with chaff, pressed down. The bees can be gotten at any time by lifting the top box. I think it is cheaper and more convenient than cushions. In the spring, chaff can be thrown out, nails drawn out of lath, and the whole piled up like empty grain-sacks, occupying little space.

IMPORTANCE OF CONSTANT ATTENTION TO THE BEES.

Of course, I have given a good deal of time to the bees—much more than would be necessary to an experienced apiarist. My wife complained that I did not give the bees any time to gather honey last year. In deference to her view I stayed away from them for three weeks, during harvest. At the end of that time, when I brought in a box of moths to burn, her opinion modified somewhat. This year the weaker colonies had my assistance to

fight the moth—at least once a week during their prevalence; and now that six little mouths, and several big mouths, too, are daily filled with sweetness, with big jars and numbers of section boxes set away to sell, the previous remark has ceased to be repeated.

The season has been a good one for honey—the fall, remarkably so. The bees were wild with delight, and kept up a busy hum everywhere in the fields. On the 14th of September I was surprised and chagrined to discover a swarm absconding to the woods, too far gone to be stopped. About the same time, Mr. Moore's wife, when he was gone from home, caught a swarm of black bees. Of course, they were not from his or mine, for ours are all hybrids and Italians. JOHN S. SARGENT.

Hutton, Ill., Nov. 13, 1885.

Friend S., we thank you for your interesting account of your experience, even though you are an A B C scholar. Your plan of finding black queens is the same used by Mr. Quinby years ago, and was mentioned in our bee-journals, and I think it is described in his book, although he did not have the perforated zinc for the purpose, as we do. We have sometimes succeeded by shaking the bees on a sheet, a yard or more from the entrance. As they spread out and crawl in, the queen can usually be recognized. Your plan of tacking burlap on the inside of a Simplicity hive is also old; but as we do not often winter bees in Simplicity hives, the idea has been gradually dropped. I think as a rule, friend S., bees will gather more honey where the hives are opened almost every day, than where they are not so much watched and loved.

INTRODUCING.

A MODIFICATION OF THE DOOLITTLE PLAN.

THE following plan of introducing queens I do not claim as entirely new, but rather a new application of the plan given last spring by Mr. Doolittle, of introducing queens in forming nuclei.

DOOLITTLE'S PLAN OF FORMING NUCLEI.

By the way, I made 25 or 30 nuclei on his plan, and should not want to be deprived of the use of it for the next five years, for \$50.00. Nuclei formed on this plan will often repel robbers in a few minutes after being hived on the new stand, and in an hour or so will be bringing in honey and pollen with a vim; in short they behave precisely like a natural swarm when hived on a new location.

INTRODUCING QUEENS.

First make the swarm queenless, if not already so. I remove the old queen in the middle of the day. If the queen to be introduced is a very valuable one, and the queen to be removed is old, and likely to be superseded, I would wait a day or two to see if cells were started, so as to prove that there were not two queens in the hive. In ordinary cases I would not wait another day, but would proceed just before night to smoke them thoroughly, a little at first, so as to drive them into the combs, and more of it afterward, and at intervals, until they are thoroughly gorged with honey. The bees are then to be shaken off in the hive, and the queen dropped right down among the helpless mass at the

bottom, and the swarm deprived of their combs until morning. If the weather is cool, put the cover on as usual; if hot, put a chip under it to give more air. The combs containing brood may be given to another swarm to care for through the night. If covered up warm, a strong swarm might cover brood for half a dozen others. I return the combs early in the morning, and let them alone for a few days.

Caution.—Before smoking them, see that there is honey in all parts of the hive; if not, it must be given them in some way, as the bees must be made to gorge themselves. This is essential to success.

MY IMPROVEMENT

in the method of introducing queens, as given by Mr. Doolittle, consists in applying the same to full swarms by waiting until night, when all the bees are at home, and also dispensing with the troublesome caging process. I give the following

REASONS WHY I PREFER THIS METHOD

of introducing queens, to any way I have tried:

First, I think it is the surest method extant. I have never tried it with a case of laying workers; but if I had the opportunity I would try it with a good deal of confidence. I introduced queens this fall to over a dozen heavy swarms, mostly vicious hybrids, with perfect success, and that at a time when robbers were bad and bees were cross, which brings us to another reason.

Second, it makes no difference how cross bees are; in fact, during a dearth it seems easier to make bees gorge themselves by the use of smoke, and especially blacks and hybrids, which are the class of bees generally operated on by the A B C class.

Third, This process brings about the same conditions that exist during a flow of honey, but in a greater degree; that is, *all* the bees are gorged; and having no place to deposit their honey, wax secretion is commenced by *all hands*; and after the combs are returned, the cells will be lengthened out with new white wax, even if it is during a time when no honey is gathered.

Fourth, It does not require the skill of an expert to introduce queens by this method. Anybody who knows how to make bees gorge themselves by the use of smoke can succeed every time. I return their combs early in the morning, and contract the entrance, if robbers are bad, as, of course, they would be in no condition to repel robbers until they could disgorge some of their honey. Also, there is no danger of their absconding when deprived of their combs in the night time, even if they were in condition to fly.

CHALON FOWLS, 42—90.

Oberlin, O., Nov. 16, 1885.

The plan you mention, friend F., is not new; in fact, it was given through the journals as much as ten years ago. Friend Alley used to recommend tobacco smoke, in place of smoke from rotten wood, because it partly stupefied them, and I frequently used this plan for introducing queens, when I failed to succeed by any other. I have often made nuclei stop bailing their queens, by taking their combs away, and letting them cluster on the sides of the empty nucleus hives. The objection to it is, the amount of time it takes, and the troublesome process of shaking and brushing the bees off from every comb. With a two-frame nucleus, of course this does not amount to much; but if

robbers are bad, they pitch into these empty combs with a vim, as you perhaps know. Another thing, it costs quite a little honey to make bees gorge themselves during a dearth. I once had a colony with stores enough for winter—at least, so I thought. They were cross hybrids, and I smoked them several different times to make them gorge themselves with honey. This induced them to lengthen out the cells, and build out combs in some places, as you mention. But before I got the queen introduced they had lost at least a half of their winter stores. It had been converted into wax, instead of being put back into the cells. Notwithstanding these objections, I think your plan an excellent one many times. The idea that they commence working like a new swarm, is doubtless true, although I have never noticed it. The loss of queens in introducing, of late years, is much less than formerly. In our own apiary, we do not lose one in 25, even where we put them in rapidly. In introducing 70 imported queens this fall by use of the Peet cage, not one was lost, and they are considered the most difficult to introduce of any queens we get hold of, after their long sea-voyage.

J. H. MARTIN'S DEVICE FOR SELLING EXTRACTED HONEY.

CAN WE SELL OUR EXTRACTED HONEY FOR ONE CENT PER OUNCE, AT WHOLESALE?

I HAVE fallen into the habit of raising extracted honey, and it seems that I am not letting my bees work to good advantage if I run for box honey. Then the swarming, just as they get settled down to business! away goes your swarm, leaving boxes about half full of honey. There is more or less a check every time a swarm comes off. We have run 160 swarms for extracted honey, and every swarm was doing its level best. We had but six swarms from the 160. A lady, whose husband kept bees, visited our apiary and said she was glad to get where she could see some honey. At their house it was swarm, swarm, swarm, and no honey.

When I get my tons of extracted honey, I am then conscious of the fact that I have an article that is not staple. Buyers don't offer you cash for it; if they handle it at all it is on commission, and this year your share would be about what the commission and freightage would be. The great problem, then, has been with me to get my honey upon the market so as to get some money out of it. It is very evident, that if we could convert all of our honey into confectionery, the entire honey crop would not supply the demand. Now, in the absence of a method to convert it into confectionery, the next best thing is a small honey-package. D. A. Jones, of Canada, has given us his little tin boxes; but their appearance is so much like a pill-box, that they don't seem to take on this side of the line. My experiments for a small novel package have resulted in the invention of what I term the "Canteen honey-package." The novelty consists in the fact that the honey from it can be eaten from the hand, like an apple or orange. It is very attractive; and by turning a little crank upon one side, the honey is forced out of the orifice, where it can be bitten off. Candied honey alone is used in this

package. We have tried to educate people in relation to the purity of candied honey; but there is so much adulteration in every thing we eat, it is of but little use to reason with them. Is not a small package a good method to teach the rising generation the value of pure honey? These are the thoughts that have actuated us in preparing this package. We hope it will be a benefit to bee-keepers at large. Honey put up in these packages realizes the bee-keeper 16 cts. per lb. Will it pay to put up honey in such small packages? This question can be answered only by a trial in each bee-keeper's locality from our own experience. We have so much confidence in it that we hope to have several thousand upon the market during the holidays.

Now, Mr. Editor, if I have ground my ax too much in this article, you may just notice my canteen, and refer the friends to my advertisement in this issue.

JOHN H. MARTIN.

Hartford, N. Y.

Friend M., I should almost have known that the machine was of your get-up, even if I hadn't seen your name at the end of the letter, for it is just like you. I will explain to our readers, that the package looks like a common tin blacking-box. A crank on one side makes it look somewhat like a toy music-box the children have about the holiday time. You just take out the cork and turn the crank, and the nice basswood honey oozes out in a square stick, ready to be bitten off. The quality of the honey is excellent; and the only drawback I see in regard to the enterprise is, that it seems to me the machine will cost too much to be afforded so it can be retailed at a dime. Retailers would want to purchase them at \$7.00 per 100, filled with honey. Four ounces of honey would be worth, say, 4 cents, and there would be 3 cts. each for making the machine and filling it with honey. Perhaps I should add, that a strip of colored paper is attached in the form of a bail, so as to make the packet look like a canteen, such as the soldiers use. If any one objects that this is something like free advertising, I would reply that friend M. will never get rich out of it at the prices he offers it.

UPPER ABSORBENTS.

A COVERING OF LOOSE CHAFF MORE DESIRABLE.

M R. HEDDON utters a sentence on page 696, Oct. 15, that strikes me, and one to which I expected the editor to take strong objections. It is this: "I am becoming of the opinion that our upper absorbents are usually useless, and oftentimes worse." It strikes me, because I have arrived at the opposite conclusion. It seems to me that all natural phenomena involved would argue in their favor. But what has most conduced to convince me is actual experience in wintering. I winter on summer stands, in summer hives. I put chaff division-boards in the sides, and chaff cushions on top. This protection on two sides and on top, though far from perfect, perhaps, works quite well. It confines the bees to a small compass, and furnishes a non-conductor of heat, and absorbent above—the direction in which heat and moisture both tend most to go. Usually the top cushions have been only about 1½ inches thick,

with two or more sheets of burlap between the cushion and frames.

Last year I bought, on trial, a kind of L. Simplicity hive. The surplus arrangement of this hive consists of half-stories, into which a slotted honey-board is fitted. After inserting the division-boards I spread a sheet of burlap over the honey-board, and filled the half-story with chaff, making a layer about 4 inches thick. Every one of the six colonies in this style of hive came through in first-class condition. I have found that bees winter best in the sun, because dampness, from whatever source it comes, evaporates more readily. Those shaded will become positively wet, and I find they are more affected with dysentery, and dwindle worse in the spring. Now, every one of these six stood in the shade, and three of them were the most densely shaded in the apiary; yet all kept dry, and all went into summer booming. Of some 25 other colonies in the shade, two died, and nearly all dwindled. The only extra good one was the only one wintered largely on sugar stores. Except in the features named, the chances of all were so nearly alike that I attributed the difference in results to the difference in treatment. I am about convinced that a covering of loose chaff is more than half the battle, and I have told why. Now will Mr. Heddon kindly give us a reason for the faith that is in him?

HOW MANY FRAMES IN THE BROOD-CHAMBER?

Mr. Hutchinson says, page 657, Oct. 1st, that when given but 5 frames they will build no drone-comb; but it is *possible* that, when hived in a large brood-nest, they will build *some*. My experience is, that they will build a great deal, even when allowed access to the surplus boxes at the start. But, does not Mr. H. use an eight-frame hive? Does he fill the extra space with division-boards? Do the bees work as well over these dummies as over brood-frames? Will Mr. H. please explain? Moreover, are those 5 frames enough to accommodate a thrifty queen? Mine that have not swarmed, or before swarming, will use ten frames, and I have had a great deal of trouble with queens (with 7 or 8) going into the sections, because they become crowded below. This is caused in part by the immense quantity of pollen gathered in the spring. They will store enough to almost pack 3 entire frames. This superabundance of pollen often becomes a nuisance to me. Is this locality peculiar for that? Mr. Doolittle once intimated that queens will lay more heavily a few weeks before swarming, or in the early part of the season, than they will after. Is that so? I am inclined to think it is.

Mechanicsburg, Ill.

GEO. F. ROBBINS.

Friend R., I think I agree with you in regard to absorbents over the bees; but as friend Heddon has absorbents at the sides, his arrangement may be such that it answers every purpose. I do believe in having the bees, when wintered outdoors, have all the sunshine that can possibly be given them, and I am also strongly in favor of loose chaff or tolerably loose leaves; and where the material over them is loose I do not think it matters whether it is a foot thick or two feet thick. If it is *packed down* so as to be heavy, it may become damp and sodden, and this we wish by all means to avoid.—I think your locality must be a little peculiar in regard to the quantity of pollen. We never have too much here. Will friends

Heddon and Hutchinson answer the inquiries above?

AUTOMATIC SWARMING.

EXPERIMENTS OF AN A B C SCHOLAR.

AS you request the A B C scholars to experiment with automatic swarming, I will send you the results of my experiments. I can not say that the plan has been a perfect success, but it is simple, and has the elements of success in it. On page 238 of A B C, in speaking of "Odor of Bees," we find it stated, "The odor of a laying queen has a strong attraction for bees," and that they will be attracted by the odor on a person, or a piece of wood, for days after a laying queen has touched it. On page 259 we find it stated, that "swarms are attracted, and are apt to cluster upon the same spot where a swarm has recently been clustered, because of the odor left by the queen of the previous swarm," etc.

Now, putting these two statements together, it is very easy to see that, if we wish a swarm to cluster in any particular place, we have only to manage some way to perfume the spot with the odor of a laying queen, and the chances are strongly in favor of the swarm clustering there; and after the first swarm has clustered there, the probabilities are still more favorable, and increase with each succeeding swarm; and how can we manage to secure the desired odor, more easily and quickly than with queen-cages that have recently contained laying queens? This looks like a very simple problem, and now for the proof:

When I first started out on this plan in the spring, I did not think of trying to get them to enter a hive, but only wished to have them settle in a desirable place; nor did I get them to enter a hive at all, for the simple reason that I had none prepared, when any of the swarms clustered in the place I prepared for them; although, upon placing the hive in position immediately after they had clustered, they readily entered it.

Of all the swarms that issued and settled, some 18 or 20 in all, more than half of them settled on this place, and in no other place did two swarms cluster. Now, by fixing hives on different sides of the apiary, in desirable places, and placing the cages immediately in front of them, in a little bunch of limbs, and placing a shingle, or some such passageway, from the top of where the cluster will be to the entrance, for a bridge, as it were, it is probable, from the success I had, that we can cause nearly all our swarms to enter the decoy hives of their own accord.

Economy, Ind.

GEO. W. WILLIAMS.

If I get your idea, friend W., it is to fix a hive, suppose we call it a decoy hive, on a suitable platform, up in a tree, at about such a height as a swarm would be likely to cluster; give the spot the odor of a laying queen, by putting there a queen-cage, or several queen-cages containing laying queens, or having recently contained laying queens. If a laying queen were there at the time the bees clustered, it would hinder them from going into the hive, perhaps. On this account it might not be best to have any live queens at all; and it strikes me it can be arranged so the bees would cluster on that spot, and go into the hive. When you get home, place the hive where you wish, and substitute another, and so on.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

DOES ERYSIPELAS AGGRAVATE THE EFFECT OF STINGS?

I COMMENCED by purchasing of you a colony of Italians, with which, I am glad to state, I am satisfied. The tested queen produces very handsome workers, and is very prolific. From those Italians I received 25 lbs. of comb honey (15 lbs. white, and 10 of buckwheat); and let me state, I did not get those Italians until the 4th of July; and from this fact, of receiving them on the 4th of July, the anniversary of our glorious freedom, my apiary takes its name. I next purchased 12 colonies of bees from a young man near by, who wanted to sell cheap so as to attend school, and accordingly I purchased what he had, although his father always, since 1870, kept them and was loth to part with his old comrades. He could not care for them, as he was subject to erysipelas, and came near dying by being stung by bees.

I noticed the article in GLEANINGS of Sept. 15th, "Killed by Bee-Stings," and it then came to my mind that that lady must have been subject to erysipelas; in fact, if such be the case, it will not be safe for such people to interfere with bees.

From 3 hives of those 12, I received 144 lbs. of honey, which was very fine. I have increased my bees until I now have 20 swarms to go into winter quarters with. I intend to winter part on summer stands, and part in cellar, as I have one 12x40, and I hope to give a good report next spring.

I purchased an imported queen from Frank Benton, and I am glad to say it met with satisfaction. I intend to import a Cyprian and Italian in the spring. The one I received was a Carniolan, a perfect beauty; and what has been said for the Carniolans, in my opinion, does not half do them justice. Batavia, N. Y., Oct. 28, 1885. F. J. CROWLEY.

We are glad to hear that you think the Carniolans have not had justice done them, friend C.—In regard to erysipelas, we shall be glad of further facts in the matter. Do bee-stings really produce a more aggravated effect where one is thus affected?

REMOVING BEES IN COLD WEATHER, IN CHAFF HIVES.

Can bees be moved in cold weather, in a chaff hive, a distance of about 17 miles, without removing the cushion? F. Fox, Jr.

Cherry Valley, N. Y., Oct. 28, 1885.

Friend F., it might be done without any trouble; but if the bees should get stirred up, and become demoralized, so as to crowd the entrance and the other crevices that furnish air, they would smother. The only safe way is to remove the cushion and fasten the cap down so it can not get out of place, putting a piece of wire cloth over the entrance. They should then be left until they settle down quiet—say an hour or two; then they may be carefully taken up and moved by sled, wagon, or on the cars. If the latter, however, I would, for safety, remove the cover entirely, substituting a sheet of wire cloth in its place, then they can not possibly smother. When they reach their destination, let them stand until they get off the wire cloth and get on the combs; that is, if

they have left their combs. After they recover so as to be in their normal condition, put in the burlap sheet and cushion as usual.

WHERE DID THE EGG COME FROM? ANOTHER POSSIBLE CASE OF A STOLEN EGG.

I read friend Knox's article, headed, "Where did the Egg come from?" and also friend Williams', "Do Bees steal Eggs?" I accordingly concluded to give you a very singular occurrence in my own experience. I got through the winter with four colonies, or all I started with. Two were weak, and I took one about 4 miles away to my father-in-law's, during apple-bloom, as there were but few bees near to build up, and they did very well at first. One day I went to look at them, and I saw they were very strong, and would swarm soon; but as my father-in-law was old, to give him no trouble I told him I would come and divide them, as he wanted a colony any way. So I went over again in 22 days, and, alas! no queen nor eggs, and not a worker-bee in a cell, and only 6 or 8 drones, and they dead. But there were several queen-cells, all empty but one, and that was sealed. So I waited a day or two, and put in a queen-cell, and examined again in four or five days, and found the first one had hatched, and the one I put in cut down and destroyed. Why would all the workers be hatched, and remaining drone-larvæ all dead, if the same queen laid the eggs?

HOW LATE CAN QUEENS BE FERTILIZED?

I tried raising queens from nuclei, and hatched several. Some would be deformed, having but one wing, or some other deficiency, and in a few days disappear. I then tried dividing strong colonies, and made a success of it. One queen hatched about the very last of September or first of October, after everybody said there were no drones. She began laying the first week of October, and everybody said she would be a drone-layer; but her bees are now hatched, and all are workers too. She is two-banded. She is still laying; and of five other colonies, none are laying now, and three quit in September. I fed all of the time, to get into good wintering condition.

It was a very bad honey season here. Several did not get a taste this season. I took only 2 lbs., and I fed, to five colonies and one nucleus, 140 lbs. of sugar. I am going to test the chaff hive for wintering, for the first time. I borrowed two of a neighbor who lost all of his bees last winter, but from having too much elder, I think. E. B. HAUGHEY.

Pearson, O., Nov. 7, 1885.

Friend H., you have been raising queens with nuclei that were too weak in bees. With from a pint to a quart of bees, and all other requisites, we have no trouble with deformed queens, or those deficient in legs or wings.

A REPORT FROM ONE OF OUR QUEEN-BREEDERS:
MORE ABOUT YELLOW-JESSAMINE HONEY.

The bees are having a good time of it, and I have lost many a good queen from the nuclei starving, as I have been sick lately. All my full colonies are overrun with honey, top and bottom story alike, not being able to extract any honey since June. The bees had nearly every crack filled when I saw them last. There is no chance now to take it away, and they will have it to winter on. If I am spared to see next spring, won't I have some tall colonies for early queens? I have some splendid stock now.

I should be very much troubled if we had to look after and prepare bees for winter. The only preparation they get is lots of stores, and they can remain on their summer stand safely. The day before I took sick I placed a nursery with, I think, 13 queen-cells, just ready to hatch, in a queenless colony, and I have not seen any of them since. I knew the queens could not get out, and if something was not done I should lose the colony; and when I am sick there is not any one around I can get to go near the hives, to work among them. So one day three nuclei swarmed out, and all clustered together. I got the hired man to put a veil and gloves on, then he got them in a box, all making a considerable colony. He shook them right in front of the same queenless colony, where he said he saw two of the queens go in safe, and all the bees, thereby making a good strong colony of the one that was for nearly two months without a queen.

YELLOW JESSAMINE.

I have watched carefully all the pros and cons about the honey-poisoning, and have to think, with many writers on the subject, that the poison is not from the honey, or, at least, that from the yellow jessamine, as our woods for miles around abound in it, and it is delightful to walk through them when the flowers are out. I have used and sold lots of early honey, with no evil results. I know of some cases where any honey will give pain to the parties partaking of it. I have a case in our own family, with Mrs. E. She never takes honey that has not candied or granulated, but that she suffers with violent pain after. When it has granulated she warms it and dissolves it, then it is perfectly harmless to her. I believe that the yellow jessamine is very poisonous, and I have seen bees many times in a sort of semi-conscious state, hanging on to the flowers. Not only honey-bees, but carpenter and bumble bees. We have a vine in our flower-garden, trained to a rack, and it is about five feet in diameter, almost a perfect ball; and when it is in bloom it is the talk of all around, a perfect covering of bright orange, with here and there a sprig of green leaves projecting, a perfect nosegay, sending its fragrance for rods around. W. J. ELLISON.

Stateburg, Sumter Co., S. C., Oct. 9, 1885.

Friend E., your testimony corroborates what Prof. Cook said; and I feel pretty certain that an old bee-keeper, accustomed to the use of honey, would have eaten the honey that produced the deaths, in moderate quantities, with impunity.

A REPORT FROM AN A B C SCHOLAR, AND HOW HE SUCCEEDED; A KIND WORD FOR GLEANINGS.

I commenced this season with five swarms, one queenless one. This did nothing but build up during summer. The remaining four gave me six new swarms and 300 lbs. of beautiful extracted honey. I use the Simplicity hive. I had nine swarms in double hives. I took extra bodies away, and put them in condition for winter. October 15th I had 150 lbs. of honey in brood-combs, after leaving them plenty for winter. R. L. James gave me four colonies after taking the honey from them, which I stocked up with my extra combs, so now I have 15 good colonies.

A GOOD YIELD FROM BASSWOOD AND HORSEMINT.

We have had no "bug juice" here this year. White clover is not much to boast of. Basswood gave me a large yield for about 8 days. The season

was short on account of wet weather. The rest was mint as spoken of in A B C, page 152. It commenced blooming about the first of August, and lasted about six weeks. Our sand prairie, along the Wisconsin River, was completely covered with it. Bees worked on it early and late. The honey was very light colored, and of fine flavor. My wife likes it much better than basswood honey.

I had two acres of buckwheat within thirty rods of the apiary, and saw bees working on it but one day, and find no trace of buckwheat honey in the combs. Goldenrod and autumn bloom amounted to but little, on account of cold and rainy weather. My bees are mostly blacks, with a few hybrids mixed in. I handled my bees during a honey yield without a veil, simply using smoke. I like hives well filled with bees, and such I have wintered without trouble in a bee-pit, where the thermometer stood at 35°. I have no luck with small swarms.

I have five acres of alsike, sown last spring. It looks well up to date. I have been in the bee business three years, but never had over 12 swarms until now.

GLEANINGS A WELCOME VISITOR.

A word for GLEANINGS before I close. It is a welcome visitor in our home. I hardly think I could do without it. We enjoy your farm, garden, and poultry sketches as much as the rest, and your home department ought to reach many more.

Wyoming, Wis., Oct. 20, 1885.

J. M. PECK.

Friend P., I presume you refer to the horsemint; and it is interesting to know that it yields honey from Texas to Wisconsin.—I presume the reason why the bees would not notice the buckwheat, was on account of the horsemint honey, which was more to their notion. It is a frequent thing for *Italian* bees to refuse to work on buckwheat while they can obtain white honey from red clover; but at the same time, the blacks will be storing dark buckwheat in considerable quantities.

\$800 A YEAR "AT THE VERY LOWEST ESTIMATE."

We have just received a communication from a Mr. W. Baird, of Pittsburg, Pa., making a broad and positive statement like this, in regard to carp culture:

It requires no capital, and brings in a large revenue, and there is a market everywhere for the fish. There is no doubt but that more money can be made raising fish, than by raising sheep, cattle, or hogs. One-eighth of an acre devoted to German carp will make a profit of \$800, at the very lowest estimate. W. BAIRD.

Pittsburg, Pa.

The same article, word for word, as nearly as I can remember, has been published in some of our agricultural papers; but it seems to me that such assertions are very unwise, to say the least. I should not want to assure anybody that he could make \$800, at the lowest estimate, on bee culture or any other industry, for there are risks to run in launching out into almost any industrial pursuit, and every one must take his own chances. While I am about it, I want to speak of another thing. Of late it is getting to be quite common for a writer to send some communication, word for word, or almost word for word, to different papers. This is surely unwise, and he lays himself

open to the charge of copying as original what has already appeared in print. There is certainly enough to write about, without ever telling the same story over again.

A FAVORABLE REPORT OF THE HEDDON SYSTEM.

We have been trying Heddon's system this year, and it has proved a success. We increased our bees from 16 to 31, and took 1000 lbs. of honey. It has been the worst season we have ever known here—cold and rainy, so the bees could not get out to find the honey, of which there seemed to be plenty. However, we shall not be discouraged as long as they do as well as that, and we have a home market for our honey at 20 cents per lb. We shall try the Heddon system another year; but I can tell you, we have to use the 15-lb. stone to keep the covers on here, and the apiary looks like—a rockery.

G. L. HUBBARD.

Fairview, Lincoln Co., Dakota, Oct. 24, 1885.

SALT AROUND THE ENTRANCES; WILL IT KILL THE GRAPEVINES?

Will not the salt you use and recommend for destroying weeds and grass about bee-hives, in time injure your grapevines as well as other valuable things growing in the bee-yard? I have often thought of salt, but feared the results, so I never used it.

S. T. PETTIT.

Belmont, Ont., Can., Nov. 4, 1885.

Friend P., we have used salt, more or less, in the manner mentioned, for the past three or four years, and I have never discovered that our grapevines were injured in any way. Salt is frequently used as a fertilizer; and though an overdose will kill the crop for the time being, the land soon recovers, and seems to be benefited for a number of years by the application.

A SAD DEATH OF A TWO-YEAR-OLD BOY FROM BEE-STINGS.

The death of that lady in Pennsylvania, from bee-stings, reported in your issue for Oct. 15, page 704, makes me feel like telling you of another similar case that happened not far from here last month. One of my cousins, Mr. Siméon Létourneau, a rich farmer of St. Constant, three miles from here, was keeping bees in box hives. Last spring I sold him 25 Simplicity hives, in which he put all his new swarms, which he put on the ground in his garden. Last September one of his children, a little boy two years old, took a stick and ran after a pig that happened to run in front of the house, and drove it through the garden gate that happened to be open at the time. The pig ran against a hive and shoved it off the platform. The bees flew at the child, and stung him in the face and in the mouth. Mr. Létourneau, hearing the cries of the child, ran to him, took him in his arms, and carried him to the house. In a few minutes the child's face swelled up so that his father became alarmed, and hurried one of his men for the doctor; but as soon as he arrived, the child died in his arms, 25 minutes after he got stung.

J. O. BELLEFLEUR.

La Prairie, P. Q., Canada, Oct. 17, 1885.

Friend B., the story you tell us seems terrible. This little boy was just about the age of Huber, and the poor little fellow was doing the best he knew how, to take care of his father's premises, garden, and bees. I do not know whether any thing could have saved the child's life, under such circumstances. Our readers of the medical profes-

sion have already given us considerable information on the subject, and it is highly important that we should all know all that can be known in regard to the best way of treating such cases. I presume the child was more than usually sensitive to bee-poison, for I have known children when quite small to be stung severely, and yet suffer but comparatively little.

HOW LATE IN THE FALL WILL A QUEEN BE FOUND LAYING, IF NOT STIMULATED BY FEEDING, WITH AN ORDINARY AMOUNT OF PASTURAGE?

I noticed a pretty good colony of blacks, Sept. 21, and there was only one or two combs with brood, and they were nearly all hatched out. No eggs could be seen. I have an Italian nucleus I have been building up, and to-day 25 combs are full of brood and eggs. Can I start the black queen to laying this late, by feeding as per directions in your A B C? I will try.

L. H. ROBEY.

Worthington, W. Va., Sept. 25, 1885.

Friend R., old queens, as a rule, stop laying when the honey-flow ceases in the fall, or as soon as the weather is so cold that the bees stop flying. Queens reared late in the fall, however, will usually keep on with brood quite a little later, and the Cyprians and Syrians will often continue breeding so late as to use up the stores they were allowed to have for winter. You could start any queen to laying at any time of year by judicious feeding, and keeping the colony warm.

APICULTURAL STATION AT AURORA, ILLS.

We are glad to note that the above institution has already got at least partially under way, as our friends will notice by the following:—

In June the Department determined to establish an apicultural station; and although this was very late in the season, the Entomologist thought best to make a beginning this year. The location having been selected, all the preliminary work had to be done, and I did not get settled down to work until in July. I have, however, been able to make progress, as will be shown by my report to the Entomologist.

N. W. McLAIN.

Aurora, Ill., Oct. 28, 1885.

REPORT FROM ALSIKE; HOW A BEGINNER REDEEMED HIMSELF FROM BLASTED HOPES.

I received of you last spring some alsike clover seed, Simpson, spider, and seven-top turnip. The alsike did well. I sowed about three-fourths of an acre, and it is all started nicely. I think by next spring I must get a few pounds more. I did actually raise one spider plant, but it secreted no honey, that I could see, and the Simpson hasn't a vestige. There was not a seed that grew. I tried it in a hotbed and in boxes, in the house, and in the open ground, but not a sign of a plant did I get. The soil may not be right here for those two plants, or else the seed was not good.

I am just starting in bee culture. Last winter I lost all of my bees, and so of course I had to start anew again this spring. I will tell you how I got started. My neighbor, who pulled eleven colonies through, asked me whether I would furnish a hive for every other swarm. As he is a "swarmer" and I am a "hive-maker" (at least I make my own hives and a great many for my neighbors), I told

him I would. I put a lot of hives down for him, and a lot for myself; and as the swarms came off he put one in his hive and one in my hive, and so on, until I got 8 swarms, and I traded him hives for two old ones, and so I have 10 all told. They are all on worker fdn., on the Gallup frame and Simplicity hive, and I think in good condition for winter.

A HOME-MADE EXTRACTOR.

I made an extractor, and just as good as one I could buy for \$10.00 or \$12.00; and all together I received about 150 lbs. of comb and extracted honey, and they are filled for winter since the last extracting. I use 12 frames in the hive, and some of the swarms would scarcely cover two frames. I used a division-board, and built them up on foundation as fast as they could use it. The bees did well on white clover until about harvest; during that time they scarcely did any thing. Then buckwheat soon came in bloom, and they did first rate for about three weeks, and since then they have done very little.

S. B. MILLER.

Amish, Iowa, Oct. 2, 1885.

Friend M., the Simpson and spider plants seem to give a good deal of trouble in the way you mention. With the directions given in the A B C, however, we do not fail to get any amount of plants. But the cheapest way we have found is to take up the seedlings that come up themselves every spring in the open air. In fact, we have never been able to get either of the plants to germinate and grow as well as they do where they come up themselves, out in the lots.

DYSENTERY RESULTING FROM CLOVER HONEY WITH NO POLLEN.

I placed a crate of sections, that had about a handful of bees in it, on a hive; and in doing so I closed the hole in the bottom of the crate, and the bees could not get out. When I took the crate off, the bees were all dead, and the sections wet, and daubed as badly as any that had the dysentery last winter. The honey was new clover honey, and contained no pollen. They were confined about a month.

WM. WITHROW.

Paint Valley, Ohio, Oct. 19, 1885.

Friend W., I hardly think your experiment a fair one. The bees were in an unnatural state, on account of confinement. A handful of bees could hardly maintain the proper temperature to stand confinement safely, as a colony does in winter. I believe, however, we have had several reports of bees that did show something very much like dysentery, where very little pollen was in their stores.

MEXICAN BEES.

Rev. F. B. Ticknor, editor of the *Church Record*, informs me that while on a missionary tour in Western Texas, last summer, in company with another gentleman, they found a colony of what are known here as Mexican bees. They build their comb from the end of a limb, somewhat like a hornet. The men climbed the tree and secured a piece of the honey, and found it excellent. Have you ever heard of them, and what do you know of them? This is the first time I ever heard of them; and from Mr. Ticknor's description they are more like the Italian than the common black bee.

A CAVE WITH LARGE QUANTITIES OF HONEY.

Some years ago I saw, in Missouri, the crotch of

a tree where the bees had built comb sufficient to hold perhaps 20 pounds of honey the previous year, but the bees had all died during the winter. Mr. Ticknor also says they visited a cave where untold quantities of honey were stored. People living in the neighborhood, by means of an Indian ladder climbed up and secured all they needed for their own use; but it would require considerable labor to get to the part of the cave containing the bulk of the honey.

T. F. McCAMANT.

San Antonio, Texas, Nov. 5, 1885.

Friend M., we have had some notice of the Mexican bees you speak of, but we know comparatively little about them. If any of our readers have it in their power to give us further particulars in regard to them, we shall be very glad indeed. It would seem funny, would it not, should it happen that we have bees equal to the Italians, in the southern parts of our country?

BASSWOOD PROPAGATION; QUERIES CONCERNING.

Will you please ask some of your subscribers who have tried planting linden-trees, how they succeeded? I put mine out in the spring of 1884, and last winter the rabbits ate them off very close to the ground. Most of them came up again this spring, but they are all very weakly looking. The tallest is only 15 inches high. I hoed and mulched them, but they do not seem to grow fast at all. I think I shall put tarred paper around them this fall, to protect them from the rabbits.

I sowed the alsike clover you sent me, with barley, and I have a pretty fair stand of it on 6 acres. It is the only field of the kind, so far as I know, in this section of the State. My bees have produced, from 6 hives, 250 lbs. in section boxes.

Garrison, Neb., Oct. 22, 1885. C. H. SARGENT.

No wonder your trees look weakly, friend S., if the rabbits ate them off. Perhaps your hoeing hindered their growth, for we have pretty clearly proven that basswoods make a more exuberant growth in a dense thicket, or in the midst of a clump of briars and brush, than when cultivated in the field, in the glare of the sun.

A CARP SWINDLE.

An apparently extensive and mean carp swindle is just being unearthed at Columbus, Ohio, through the exertions of our association. I will forward the particulars as soon as possible. In the mean time, I will say that developments thus far show that parties at Pittsburgh, Pa., and Zanesville, O., are mixed up in the matter. A large number of newspapers have been inveigled into the publication of a very plausible communication, ostensibly in behalf of the U. S. Fish Commission, but directing readers to address the "U. S. Fish Co." (not Commission, observe), Columbus, O. The postmaster at Columbus writes us that there is no such "Co." as the "U. S. Fish Co." at Columbus, and that some swindle is contemplated, as a great many letters have been accumulating there for the bogus "Co." A second letter, dated yesterday, says a woman has finally called for the letters, claiming to represent some man at Zanesville. The postmaster is holding them.

MILTON P. PEIRCE.

Philadelphia, Pa., Nov. 5, 1885.

Thanks, friend P. Our friends will please take notice, so as not to be humbugged by the "U. S. Fish Co."

REMOVING BEES; IS IT NECESSARY TO KEEP THE
HIVES IN ABSOLUTE DARKNESS, IF THE CELLAR
CAN BE KEPT BETWEEN 40 AND 50°?

Would it be a good idea to keep bees at about 40 or 50°, from the time we have to put them into winter quarters, and in total darkness, without the aid of artificial heat, until time to set them out on summer stands? or would it be better to pack and leave them on summer stands? I thought, by keeping at the degrees above, they would not be subject to the changeableness of the weather we have in this section, and would come out more bright and strong in the spring, but I did not know about the darkness. If kept at 40 or 50° they would not move if they were in the light, would they? or would the idea be any better than the ways we have? J. F. REDD.

Loudonville, O., Nov. 17, 1885.

Friend R., I presume there would be no need of darkening the cellar, providing it could be kept so the temperature would not run above, say, 50 degrees; but I think you will find this is impossible, unless you use ice. Remember, the temperature of the earth itself is 55°, and your cellar will very likely run from 58 to 60° in spite of any thing you can do, unless you get away down into the earth, and cut off communication from overhead. All things considered, I think that, in our locality, I should prefer the chaff hives on their summer stands.

HOW AN A B C SCHOLAR SUCCEEDS BY STARTING
WITH ONE SWARM.

Last spring I took a notion to go into the bee business, and thought I would get 20 or 25 colonies to start on; and as I am a poor man I had engaged \$75.00 to buy my bees with. Being anxious to know something about it, I sent for your A B C book, and in it I saw that I was on the wrong road to success; and instead of buying so many I bought one colony, and now I have three good ones, and I am not in debt \$75.00 with interest. I got 80 lbs. of comb honey. I shall Italianize in the spring, if I can afford it. B. B. MESSNER.

Nimisisa, Ohio, Oct. 13, 1885.

Friend M., I am very glad indeed to know that our A B C book was the means of saving you some money. I had had some experience in the very matter you speak of, and I knew pretty well whereof I wrote, and I think we are safe in saying that it is, as a rule, very unwise for one to go into any business on a large scale, to start with. If he has been for years a grocer's clerk, it may be well for him to purchase a grocery store in good running order to start with; but even then I believe the chances would be in favor of commencing with a small business and building it up gradually.

WIDE FRAMES STICKING TO BROOD-FRAMES; FEED-
ING UNDER THE FRAMES.

Having been a good deal troubled the past season by the sticking of the wide frames in the upper stories to the brood-frames in the lower, I have determined to resort to an expedient, recommended for the difficulty by a correspondent of GLEANINGS; viz., laying strips of glazed cloth over the tops of the brood-frames. Will you or some of your correspondents tell me how wide the strips should be, and which side of the cloth to turn down? I have also thought it might be a good plan to use, instead of strips, a single piece occupying the central part, and leaving a margin of one or two inches all round for

the free passage of the bees. Would such a plan be objectionable for any cause?

After trying various plans for feeding I have fallen upon one which is exceedingly simple, and, so far as I have tried it, it is very satisfactory. It is, to have tin pans so shallow that they can be slipped under the frames at the entrance. To facilitate the work of the bees in getting to the syrup in these pans, I fit a small piece of wood to each side of a pan, on the inside. The pans are so shallow there is no danger of a bee drowning, and the strips of wood—beveled on the inner edge—make it easy for the bees to get at the syrup. In feeding, have the syrup in some vessel with a spout—a pitcher does well—and push the pan three parts under the frames; then fill with the syrup, and push the pan entirely into the hive. A few gentle taps apprise them of the presence of their food. J. A. GILL.

Tuscaloosa, Ala., Nov. 10, 1885.

Friend G., your strips of enamel cloth, or sheet of enamel cloth (the latter being the simpler form), should have openings between every pair of brood-frames, to allow the bees free access to the upper story. You will notice, by our back numbers, that the perforated zinc is much used for this purpose, and the slatted honey-boards. The only objection to the enamel cloth is, that, when perforated as closely as it ought to be, it curls up, and the bees in time gnaw the edges, making it liable to tear.—Your idea of shallow tin pans is quite an old one. The objections are, their liability to incite robbing, and the difficulty of pushing the pans under the frames without crushing bees, and making the colony furious. If you allow more space under the frames than $\frac{1}{2}$ inch, the bees will build little pillars of wax to climb up on, so they can readily grasp hold of the bottom-bars of the frames, and these little pillars of wax are right in the way of pushing the shallow feeders in. The plan seems to have been pretty much all abandoned.

FROM 5 TO 31, AND 945 LBS. OF HONEY; HOW THE IN-
CREASE WAS MADE.

I can now give my report for the year 1885, and will say that I am satisfied with the season. I had the blues "awful bad" last spring. I lost 33 colonies out of 38. Of the remaining 5, one was good, one tolerably good, and the other 3 would have made one good colony, and no more. This is what I have done since May 18th.

I increased to 31 good colonies, and have taken 945 lbs. of extracted honey. I raised all my queens too. If I had had queens already laying when I needed them, I could have done one-third better. I sold one colony and one frame of brood in June. I see in the bee-papers, that Iowa has failed in her honey crop this year. It has been the best season I ever saw, taking it all through, when I have increased from 5 to 31, and have taken almost 200 lbs. per colony, spring count. Ought I not to be satisfied? My queens were all raised from the Syrian queen I got from you, and they are mated with Cyprio-Italian drones. Others can do as they like, but I shall try the Syrians another year. This is the method I practiced in making my increase this year.

The 10th of May I marked my best colony No. 1, and moved it to a new stand and put a hive just like it in its place, and marked it No. 2. In 10 days I

moved No. 1 again, and the one in its place I numbered 3, and so on till I had moved the old colony 4 times, and made 5 swarms by July 1st. Sometimes I would have to move the old colony every 9 days, to prevent swarming. I would always leave a frame of bees and brood on the old location, unless I wanted to raise queen-cells. After the 1st of July No. 1 got ready to swarm, so I made 4 nuclei from this, and afterward built them up from the 4 previous new swarms, so I made 9 from the one, and got 295 lbs. from the increase.

This way I did with all the old queens as fast as they got strong. I always left 6 frames of hatching brood in the old hive, and always moved the old queen. I got my honey from young swarms after they got to work in the upper story. I had all the empty combs I could use.

Now, friend Root, the Syrian queen I got of you from Neighbor H.'s apiary, her bees are all 3-banded; but about a half of her bees have white rings, and are very distinct from those that have the yellow rings. 6—WILLIAM MALONE, 5—31.

Oakley, Iowa, Oct. 26, 1885.

ANOTHER WHO HAS REDEEMED HIMSELF FROM
BLASTED HOPES, AND ALSO FROM TOBACCO.

I have 36 Italian and 10 brown colonies, in your portico and Simplicity hives. I commenced my apiary in 1883. I went into Blasted Hopes and stayed there. I then made a pledge with you for a smoker, on tobacco, and stayed there also. From 24 and no honey in 1883, I went to 36 and 1200 lbs. extracted honey in 1884. I commenced in 1885 with 46 colonies. I had two swarming seasons—in April and in September. I had three seasons of honey-flow.

HORSEMENT HONEY.

In May and June I took from horsement (sample sent), 900 lbs. extracted, and 350 lbs. comb, in 1-lb. sections. July 1st I cleaned up the extractor and put every thing away. Aug. 3d I found the hives full, either of corn, cotton, or sorghum blooms (sample sent). I took 150 lbs. in 1-lb. sections, and 800 lbs. extracted.

MORNING-GLORY HONEY.

Sept. 6th I cleared away, by taking 700 lbs. extracted and 200 1-lb. sections from morning-glories, or tie-vines (sample sent). Total, 2400 lbs. extracted, 700 lbs. in sections. To-day every frame and section is full, and ready to take off—not an empty section to put in, and nothing to put extracted honey in.

TWO QUEENS, NOT RELATED, IN THE SAME HIVE.

I have a red queen, from Viallon, three years old, and her daughter, three months old, in the same hive, laying right along, and I frequently find them on the same frame; also an Italian queen from Tadlock, two years old, with her daughter, doing the same way.

I noticed one of my best and brightest stocks changing to browns. I went in twice to find the cause, but failed. The third time, on the first frame lifted, there was a black queen, laying right along. I pinched her head off. On examination further, there was my old queen, all right, and is doing service yet. I have sold 2200 lbs. of my honey; comb, 12½¢; extracted, 10¢.

Oakland, Tex.

JOHN H. MULLIN.

I am very glad, friend M., to find that you are ahead, or, at least, on the right side of both of these departments—Blasted Hopes

and Tobacco.—The honey you call morning-glory is beautiful in body and color, but not first class in flavor, although it is very fair. It is the first report we have ever had, I think, from this plant.—Your sample of horsement honey is hardly equal to some we have had; but if you get 10 cts. per lb. for it, extracted, I think you are doing well. The other lot I should call a mixture of horsement and cotton, but there may be some other plant that gives it the horsement flavor.—The fact you furnish in regard to a black and an Italian queen laying side by side in the same hive, is a valuable one. Of course, they could not be related, and it goes to show that the matter is certainly within our reach, of having queens that will work together without the deadly hostility that has been so long characteristic of queens. Who will be the first one to advertise a race of queens that will not quarrel with each other? It seems to me there is surely an opening for some one, to both fame and fortune.

TAXING BEES; AND ARE BEES TAXABLE PROPERTY?

I should like your opinion on the subject of taxing bees. Last winter I purchased fifty swarms, and the city assessor assessed them at full value, to which I objected, and at the meeting of the Board of Supervisors I laid the case before our city attorney, and he decided them taxable property. I know of no other bees in this State which are taxed, and think they should not be. Will you please enlighten me on the subject? C. W. RANDALL.

Baraboo, Wis., Nov. 20, 1885.

Friend R., I have several times before expressed my views on this question, and there has been some discussion in the matter; but I hope, if the brethren will excuse me, even where they think differently, for saying that we consider our bees taxable property, and should feel a little hurt and neglected, if the assessor should pass us by. Hives of bees used to be classed with dogs and cats and brush-heaps, and other uncertain property; but it seems to me that, with the present state of progress in bee culture, they should be considered property with other taxable stock. It is true, they are uncertain property, and I should say your assessor had no right to put them in at full value—that is, at the price you offer to sell them. Thus, a hive of bees is worth, say, \$8.00 in the spring of the year; after the honey season is over, may be \$4.00; and perhaps, during the month of December, \$2.50 might be all you could sell them for. Therefore I would suggest that he rate good strong stocks, hive and all, at about \$3.00 to \$3.50. Weak colonies, or those with hybrid queens, etc., rate at about \$2.00 to \$2.50. In localities where bees sell for less prices, \$1.00 per colony might be a fair valuation. We want to do in this matter what is right in the eyes of the law; or, if you choose, what is right before God; and I confess I should feel better about asking God's blessing on the duties of the day, after having paid taxes on my bees, than if I had succeeded by so representing the matter that I got clear of paying taxes. If you don't think as I do about this, I am quite willing you should act according to the dictations of your own conscience. I only wish to have you know how I feel about it.

A GOOD REPORT OF THE BATCHELOR DRONE-TRAP.
FEEDING BEES IN WINTER.

In looking over GLEANINGS for Nov. 1, page 756, I saw a report of friend Batchelor's drone-trap. My experience with two the past season has been very satisfactory. We have caged queens four times, one of them being a clipped queen. It has never failed to cage a queen, that I know of, when it was properly adjusted, and I now exclaim, "No more trouble in swarming; no more hurrying, for fear that the colony will go to the woods; no sawing of a neighbor's trees, or treading down grass." But when I am told that the bees are swarming, and as soon as they begin to cluster (which will be on the trap), I place them at the entrance of the new hive, release the queen, and when the bees are nearly all in I give the hive a new location, and place the trap on the same, which will prevent them from leaving the hive, which they might do if it were not for the trap.

A TYPOGRAPHICAL ERROR.

Page 755, GLEANINGS, in speaking of feeding bees in cold weather, you say there is a danger of the queen taking wing. Why is she more liable to leave the combs in cold weather than warm, as we have rarely known them to leave them in warm weather? With the feeder that we use there is no danger of the queens leaving the comb, or of the bees being drowned. I also notice, on page 748, an item in regard to a bad odor about the hives in the fall of the year. If it were here in New Hampshire, I should call it the goldenrod.

A. H. HARVEY.

Keene, N. H., Nov. 19, 1885.

Friend H., you have got hold of a very bad typographical error. I had no thought of saying that the *queen* took wing in cold weather, or under any other circumstances. It should have read that the *bees* take wing. The blunder escaped my eye, and also the eye of two proof-readers.

UNTESTED QUEENS FROM THE SOUTH IN THE
WINTER TIME.

I should like to take advantage of your very clever offer in GLEANINGS, of a free advertisement for Southern queen-raisers. If you will, you may announce that I will furnish Italian queens by the half-dozen at 80 cents each; or single queens, at 90 cents. What about guaranteeing safe arrival? I will leave it to you to insert or not. To the Southern States it would be safe to guarantee safe arrival; but to the colder States it seems to me that, in case a queen died, another one at half-price would be fair, or charge \$1.00 in the first place. I will simply state what I wish to accomplish, and let you insert what, in your judgment, you think best. I shall be more anxious to get my name before the bee-keepers than to make money; still, I do not want to lose any. I have no bees but Italians. The young queens will be raised from a choice, select, tested queen. I have over 20 colonies and nuclei, but only a dozen are run for queen-rearing. Please announce *only* what you think best. L. W. GRAY.

Orlando, Fla., Nov. 21, 1885.

Friend G., I think it would be better for you to make the arrangement directly with your customers, although I will suggest, if you wish. I think you had better keep the price at \$1.00 in the winter time, and replace where the queens are evidently dead from want of care in putting them up. This, of

course, will call for a little charity on your part, as well as on the part of the friends who receive them, in deciding where the fault is. We received some queens a few days ago, when it was quite cold. They were put in wooden cages, without any metal except the wire cloth, and were packed in several folds of soft flannel. Not a queen nor bee was dead.

Friend G., the important matter is, Have you some untested queens all ready to mail now? You do not say you have or have not; but we want somebody who has the queens all ready to ship, and we want them to advertise in this way; like this, for instance:

Ready to Mail.—I have 17 young queens that have just commenced to lay, which I will ship promptly at \$1.00 each. Safe arrival guaranteed, if they are uncaged and handled according to the printed instructions accompanying the package.

JOHN JONES.

The printed instructions accompanying the package should be something like this:

Keep this package out of the frost as much as possible. Unroll it in a moderately warm room; and if the bees and queen seem chilled, leave them several hours where the thermometer stands at 70 degrees, before you decide they are dead. When they begin to move, a little warm honey might be given them on the point of a pin; but don't daub the poor little fellows, whatever you do. When they are lively, introduce them according to the usual method.

Halloo! here is one name already, and it is not from away down south either:

Please insert my name in GLEANINGS, for sending queens during the winter months as you offer to do free of charge. I have a number of untested queens on hand, and can fill orders by return mail.

Mechanicstown, Md.

SIMON P. RODDY.

And still another:

I have 18 untested queens which any one can have at \$1.00 each, by return mail.

Stateburg, Sumter Co., S. C. W. J. ELLISON.

SOME KIND WORDS FROM FRIEND PARSHALL, AFTER HE GOT OVER HIS FURT (SEE P. 345).

I have been wanting to write for a long time, mostly to thank several of the bee-brethren, and some of the sisters, who have written to me, sympathizing with me in my loss and bad luck. There is one, Sarah J. Axtell, Roseville, Ill.; H. J. Hancock, of Siloam Springs, Ark.; Mr. Hughes, of Illinois, and a brother at New Orleans. I thank some for sending queens and others offering me bees. Some of their addresses I have lost. God is the only one who knows how my heart swelled with gratitude, and how I say, "God bless them." I want them all to feel that I appreciate their offers to me, just the same as though I had accepted them. I was so badly crippled that I could not do a lick of work till in July, and this is my first writing. It was my "write" arm and hand that got terribly mangled. I can not shut my hand yet.

MY REPORT.

I commenced the season with seven colonies—six good, one very weak. I increased to 35 by natural swarming; have taken 1500 lbs. of extracted and 600 lbs. comb honey. I am selling my honey at home for 10 cts. for extracted and 15 cts. for comb. I have sold the most of it. My bees all have lots of winter stores. God has wonderfully blessed me,

and my prayer is that he may bless you all, when I think of the many kind letters I received. I know I had many prayers. It leads me to say, "O Lord, bless all of those good people." JAMES PARSHALL.

Skidmore, Mo., Oct. 25, 1885.

Friend P., we can unite with you in saying, "Let God be praised that he has enabled you to regain your strength so you can write at all." We are very glad to know that you have been prospered in bee-keeping once more. We as bee-keepers are always glad to extend a helping hand to those who have a disposition to help themselves, and you have shown this pretty well.

KIND WORDS IN REGARD TO THE POTATO-BOOK.

After reading your account of your visit to Terry, I felt that I could not refrain from urging you to give us a full account of his system of farming and his buildings; and could you not also induce D. E. Fenn to tell us how he manages to get an average of 37 bushels of wheat per acre, as mentioned in the potato-book? Give us another book on Terry's farming, I say. EDGAR HUSBAND.

Cairngorm, Ont., Can., Sept. 29, 1884.

Friend H., Mr. Terry is now at work on another book for me, to be a sort of supplement or sequel to the potato-book. It is to be in regard to the humane treatment of farm stock during winter, considered from a pecuniary as well as moral standpoint. Mr. D. E. Fenn gets his large yields of wheat by the use of phosphate. Mr. Terry does not have any success with phosphate, as you know; but Mr. Fenn is an enthusiast in the matter, and yet both are good farmers. The difference in the soil may have something to do with the different results they get.

TIERING UP.

What is your opinion of tiering up the hives in the cellar in this wise? Place the strongest colonies at the bottom, one in each tier, with only a bottom-board, then a cover of wire gauze, over which two thickness of burlap or other porous material, then another hive in like manner, until four or five high, placing the weaker ones at the top, with good ventilation at the top, and leaving the entrance open; and for a "playground," put wedges between the hives, to project out to hold up said burlap. The object of said tiering up is to produce an upward draft and consequent good ventilation.

Glenn, Kan., Sept. 14, 1885.

W. B. THORNE.

Friend T., there is no objection to the plan you mention, that I know of, except that of jarring the hives in handling. When we wintered in a bee-house we preferred to have shelves, so that taking down one hive did not disturb another. I think your burlap had better be drawn back so as to expose the back end of frames containing very strong colonies, or they might be too warm. A strong colony fastened in its hive with wire cloth is very apt to cover the ventilators, and smother, unless the ventilating spaces are very large.

STRANGE FEAK OF A QUEEN-BEE.

Yesterday, after I had finished extracting some combs taken from hives contracted for winter, I accidentally left the extractor so the bees could get

at it, which they soon did. About 3 P. M. I went to remove it to the honey-house, when, among the numbers of bees, I found a queen-bee, black. Can you explain what she was doing there? I thought that the queen never left the hive, except when mating, or else when she issued forth with a swarm. I put her in a cage, and hung her in a hive after showing her to several present, who were as much astonished as myself. If you can enlighten me on the subject, I should be pleased to hear from you.

Parkersville, Pa., Oct. 24, 1885.

J. P. TAYLOR.

Friend T., what you state is a very unusual thing indeed. You are sure, I presume, you did not get hold of a shiny black robber-bee, with an elongated body, and call it a queen. If the bees had been very long at work at that extractor, the effect might have been to break up a weak colony; and the bees, queen and all, might have been attracted to the extractor by the roar of the robbers.

A SAW AND PRUNING-SHEARS COMBINED.

SOMETHING TO CUT OFF LIMBS, AND DO IT EASILY.

A FEW days ago Mr. Gray had some kind of a machine on the end of a pole; and as some of our basswood-trees along the sidewalk near the store were getting to be rather luxuriant in foliage, he reached up and cut off some of the limbs which were not wanted, and as easily as you would cut off a piece of cheese with a knife. The picture alongside of what I am writing explains how he did it, only you are to imagine the implement on the end of a pole from six to twelve feet long, as may be desired; and the wire which you see is attached to a hand-lever to it in such a way as to give it a powerful purchase. I told him the machine would be ahead of a buzz-saw for cutting up stove-wood, as you can not carry a buzz-saw out into the woods, but you can easily take this along, for it is not much heavier than an ordinary ax. You will find his advertisement in another place, and he will send you a circular, telling all about it, if you write him. The price of the pruner is \$2.00, and it can be sent by mail, without the pole, for 40 cts. extra for postage.



THE POLLEN-BASKET.

WHERE IS IT, AND WHAT IS IT LIKE?

I VENTURE to take up this subject, because I think it is so generally misapprehended. While many have an indefinite idea of what a pollen-basket should be, and much less know where it is situated, very few can form a perfectly correct idea of what it is like. I have been for some time trying to get a good drawing of the pollen-basket — one that is correct. While I do not claim to have made an accurate representation, yet in some particulars I think it is ahead of any thing else.

After our engraver had submitted several drawings to me without success, I made several myself before I could get any thing that at all suited me. It is a difficult matter to get the engravers to understand exactly what features we want made prominent, at the same time preserving all the proportions. I therefore have had to tax my ingenuity with the pencil several times. Below is a portion of the hind leg, with the foot (not shown) toward



THE POLLEN-BASKET.

the base. The letters F, B, C, and F, inclose what is known as the pollen - basket. In the central portion, marked by D and A, is a depression that is dishd out, somewhat like a spoon. Around this cavity is a rim of hairs which form a kind of inclosure. This rim of hairs, together with the depression, makes what is termed the pollen-basket, though it is a little strange why it should have been called a basket. I presume, however, the name was given to it because it conveyed the idea much better than any thing else. It is in this that the bee packs the pollen which he collects. As far as I have been able to ascertain by observation, the bee always puts the pollen in this part of the leg, and never anywhere else. It would be presumption for me to differ with Prof. Cook on this point; so I will say that, in all probability, I misapprehend his meaning (see his Manual, page 88). He says, "On the outside of the posterior tibia and basal tarsus is a cavity made more deep by its rim of hairs, known as the pollen-basket." I understand this to mean, that the pollen-basket is situated on both sides of the joint C; that is, that the pollen may be parted both in the upper and lower segments, as at A and E. Since my attention has been called to this matter I have watched the bees gathering pollen repeatedly at several different times, and I have never yet seen them deposit pollen anywhere else than in the portion marked by F, B, C, F.

HOW THE BEES PACK THE POLLEN ON THE HIND LEGS.

If I am correct, no one has yet told us just how the bee deposits pollen on this hind leg, further than that it is by a sort of sleight of hand with the fore and middle leg, in conjunction with the tongue. We know, or we think we know, how the bee separates the pollen from the tongue and the front legs by means of the little flute mentioned in the text-books. The question now remains, How does the bee get the pollen from the front leg to the

hind leg, and exactly how does the middle leg transfer the pollen to the baskets? I have often watched the movement, but it is so instantaneous that my eye was unable to catch the exact process. If the bee only *would* do it slowly, so we curious mortals might see! but, no; he does it as though he had acquired this wonderful feat by long practice — or, rather, by instinct.

There is another obstacle in the way; namely, that the bee won't remain still long enough — as though modesty or bashfulness forbade him the privilege of "showing off." I have watched one tugging at a pellet of wax, and, after placing it under his chin, as if by magic deposit it in the basket; and when, again, I thought he would try it again, lo and behold! he would soar away, leaving me lamenting that the precious little secret had not been revealed.

To one who has a love for studying God's wondrous works of creation, it will be found eminently interesting. I know, dear friends, that the settlement of this and questions of a similar nature is not of vital importance; but, does it not in itself, as we observe the wonderful symmetry and plan in a thing so very small, bring us near the Maker?

Perhaps I should state, that only a small magnifying-glass is necessary to look at this pollen-basket — such a glass as I speak of just below, in answer to Mrs. Chaddock. ERNEST R. ROOT.

MRS. CHADDOCK ASKS SOME QUESTIONS FOR ERNEST TO ANSWER; MAGNIFYING-GLASSES, ETC.

I am very much interested in Ernest's microscopic work, and I wish he would examine the eye of the bee, and make a drawing of it; tell where it is situated, etc. I have only a small magnifier (bought of A. I. Root, for 35 cts.), and with it I have not been able to find any thing that looks like eyes. I turned the bee over, and looked at it up and down, around and about, but not a single eye could I see, unless those two little round knobs on top of the head are eyes. They look like immature shoe-buttons, and seem to be in an unhandy place for eyes. Then there are some more little knobs where the feelers start out. They are fast on the feelers, and move with them, and so I suppose they could not be the eyes. It would be a very safe place for them, as the feelers could always keep them from getting knocked out or off; and after he has made the eye plain, I wish he would give us the ear, if they have any ears. MAHALA B. CHADDOCK.

Vermont, Ill.

Here is Ernest's reply:

Thanks, Mrs. C., for your kind interest in the work that I have begun. I shall be most happy to give you drawings of the bee's eyes, and other microscopic organs of the bee in our future issues. As I have all the needed facilities for this work in the way of a good microscope and lenses, as well as dissecting tools, I can verify old discoveries, and possibly add something new in this department of science. The 35-cent magnifying-glasses give very satisfactory results, though not quite equal to a Coddington of same power, in quality of work. You must not imagine that a high-priced microscope or lens is essential to gain a correct idea of the various functions of the bee. In my work I use a small magnifying-glass much more than my high-priced instrument, though the latter in some cases is indispensable. The apparatus necessary for dissecting a bee may be simple and inexpensive. You need,

first, a glass of about 10 diameters magnifying power (like one you have), a pair of fine-pointed tweezer, scissors suitable for clipping queens' wings, a needle mounted in the end of an old pen-holder, and a little ether or chloroform with which to stupefy a bee while "cuttin' 'im up." You now have a very fair outfit with which to begin. No doubt you will find pleasure and profit in this work; that is, providing you do have such a thing as spare time during long winter evenings.

There is one essential that I almost forgot, which is, that you must have a good stock of patience. If your eyes or back aches, don't complain.

ERNEST R. ROOT.

NOTES AND QUERIES.

REPORT OF AN A B C SCHOLAR.

I PURCHASED my first stand of bees in the spring of 1884. I increased to three stands, and took 60 lbs. of honey the first year. Last winter I sent for the A B C book and GLEANINGS.

I began last spring with two stands; transferred them to Langstroth frames, and took 190 lbs. of honey—140 lbs. in sections, and 50 lbs. in brood-frames. I increased to 10 stands, and all in good condition for winter. It has been called a poor season by the old-style box-hive bee-keepers, not one of whom has obtained half as many new swarms, or half as much honey from the same number in the spring. I attribute my success the past season to a thorough, earnest study of GLEANINGS and the A B C. A. C. BUGBEE.

Lochiel, Benton Co., Ind.

My two hives yielded \$36.00 worth of honey, and have plenty to winter on. They cost \$17.00—a good investment on that amount of money in 7 months.

Harlan, Iowa, Oct. 9, 1885. W. M. BOMBERGER.

Bees are a failure this year. Only a few colonies made any surplus. I have about 80 colonies, and perhaps half of them will not winter without feed. Washington, Pa. L. W. VANKIRK.

SOUR SMELL—WHAT CAUSES IT.

I have investigated into the cause of that sour smell about the hives, mentioned by friend Scofield, and find it comes from the blue aster.

Ridgeway, N. Y. D. C. SULLIVAN.

A QUEEN THAT MEASURES FIVE CELLS.

I raised one queen this year that measured five cells long; that is, she would reach or cover five cells. Who can beat it? She was a Syrian.

Oakley, Iowa, Oct. 26, 1885. WM. MALONE.

ALFALFA AS A HONEY-PLANT.

Almost all the honey made out in Tulare Co. is made from alfalfa. That seems to be the main crop for honey this season. I like California pretty well, but it is terribly hot in the summer.

Hanford, Cal., Sept. 8, 1885. M. J. TWINING.

This has been the poorest year ever known in this section for bees. But few colonies will winter without feeding. My spring count was three; increased to 7; fed 43 lbs. of granulated sugar. At present I have but two colonies and two nuclei, which I intend to take to Florida this fall, as described in GLEANINGS of Feb. 1, 1885, page 97.

Harrisonville, N. J., Oct. 19, 1885. J. D. COLES.

REPORT FROM OREGON.

I will give you our report from Oregon, or I should say, perhaps, the northern part of the Willamette Valley. Bees, we think, have done tolerably well. Reports of 50, 75, and 100 lbs. of surplus are made, and bees are booming now. The fir-trees in many places are dripping with honey-dew. We have warm days, and have had for some time.

Newberg, Or., Oct. 2, 1885. CYRUS E. HARKINS.

FROM 4 TO 11, AND 277 LBS. OF HONEY.

Bees generally did well. They did but little on buckwheat or fall flowers, except on boneseet. I started in last fall with 5 colonies on summer stand, in chaff, and came through with four—one very weak. I have 11 now. I took 277 lbs. of comb honey. Thanks for your good words in GLEANINGS. If it were not for the assistance we beginners get through the pages of bee-journals, bee-keeping would be up-hill work. GEO. SPITLER, 4—11.

Mosiertown, Crawford Co., Pa.

THE SIMPLICITY VS. THE GOLDEN HIVE; 175 LBS. OF HONEY FROM ONE SWARM.

I had four stands of common bees in Simplicity hives last spring; sold \$20.00 of bees and honey, and have 100 lbs. of honey and five stands in good condition for winter. My first swarm, on June 3d, made about 175 lbs. in 1-lb. sections. About 50 lbs. of it was the nicest linn I ever saw. But bees do not fill out sections with it as with some honey I have seen from Michigan. Is it the bees, or does the honey come in too slowly? The "Golden" hive had quite a run last year, but it makes them sick to mention "Golden" now. Several will discard them, and use your Simplicity. G. F. AYRES.

Atherton, Ind., Nov. 11, 1885.

MRS. COTTON, AGAIN.

MORE \$20.00 COLONIES CONTAINING NO QUEENS.

I HAVE been humbugged by Mrs. Cotton, of West Gorham, Maine. I sent her \$20.00, and she sent me a Controllable hive and a few bees, but no queen. I wrote her about it, and she has agreed to send me another colony, in the spring. I made a few of her hives, and have five swarms in those hives now, but I don't like the hives, and don't think I shall make any more of them. I bought five colonies of Prof. A. J. Cook, of Lansing, pure Italians, *very fine*, but they were Gallup chaff hives, and I don't like this hive. I think I shall adopt the Heddon or the Simplicity hive. HIRAM ADAMS.

Port Austin, Huron Co., Mich., Nov. 23, 1885.

Our friends will notice that this is still another complaint of no queen in the colony of bees, even after the purchaser paid the enormous price of \$20.00 for it. The price would not be so very bad if the colony were sent very early in the spring; but Mrs. Cotton, I believe, does not fill orders until along in the summer, when bees are comparatively cheap everywhere else. The number of complaints that come in regard to these high-priced colonies being queenless, precludes the possibility of its being a mistake; and her singular directions, not to open the hive for a certain number of days, also seem to indicate it to be her regular way of doing business.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT.

EDITOR AND PUBLISHER,
MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, DEC. 1, 1885.

He that hath the Son hath life; and he that hath not the Son of God hath not life.—1. JOHN 5: 12.

STANLEY'S AUTOMATIC REVERSING EXTRACTOR.

FRIEND STANLEY informs us that one of these for taking four L. frames will be on exhibition at the convention in Detroit.

DISCOUNT ON GOODS FOR NEXT SEASON'S USE.

As trade is still comparatively dull, we extend our offer until Dec. 15, or an extra 5 per cent on every thing you order now, on goods to be used next season.

THE CONVENTION AT DETROIT.

I EXPECT to be on hand to assist all I can, on the morning of Dec. 9, the very day I am 46 years old, Providence permitting; and may the Lord be praised for the 46 years of life he has given me already!

THE MAN WHO NEVER LOSES BEES IN WINTER.

We are glad to know that friend Boardman will be at the Detroit convention, and we expect to have a good time in making him tell all about how he fixes his bees for winter. See card below, received just as we go to press:

The bees are all safely stored for winter. I finished setting them in day before yesterday—550 colonies in four repositories, two bee-houses, and two cellars. Now I am all ready to go to Detroit to meet and exchange notes with my brother bee-keepers.
H. R. BOARDMAN.

East Townsend, O., Nov. 27, 1885.

A WHEELBARROW TO MOVE CHAFF HIVES.

J. A. ALTHOUSE, New Harmony, Ind., sends us a model of a wheelbarrow, made to catch up chaff hives so they can be conveniently lifted and carried anywhere, no matter how much honey they contain. I should think the arrangement might prove a convenience to those who practice moving hives after a swarm is cast. The same wheelbarrow has a box that can be quickly put in place, so it will answer all ordinary purposes of a wheelbarrow. Friend A. will doubtless furnish particulars on application.

REDUCTION IN THE PRICE OF THE MUTH HONEY-JARS.

WE are pleased to note that friend Muth has come down a peg on his prices as well as everybody else, and we can now furnish any of his honey-jars at 5 per cent discount on single-gross lots. For two or more gross, 10 per cent. These very close prices can be given only with cash with order, or from some man whose name is good for the cash promptly whenever we see it. We have such men on our books, quite a few of them, and we thank God for them when we look at their names. The jars are all to be shipped from Cincinnati. If you want them shipped with other goods, we shall have to add freight from Cincinnati, which, however, is but a trifle.

DON'T LEAVE YOUR BASSWOOD LUMBER TOO LONG IN THE LOG.

If you want to make nice white sections, cut your logs, draw them at once to the mill and have them sawed into plank, and then have the plank stacked up as described in the A B C book; but have the lumber lie lower at one end than at the other, so the rain will run down and off at one end. This is especially important in the winter time. A covering of boards over your pile of plank will pay the expense. Now, in spite of all we can say about this matter, a good many of our farming friends will persist in letting the logs lie, say a month or two, and during that time the white basswood becomes dark, or of a sort of yellowish or smoky color. We have just now been working up such a lot of lumber, making about 50,000 sections. The basswood, when cut, was first quality; but owing to this one little item of neglect, we offer the whole lot at a discount of one-fourth. They are too nice for culls, and hardly fit for first quality. If any one wants a bargain on such sections, now is his chance.

THE OUTLOOK FOR 1886.

No one knows just what the honey business will be next year, any more than we know what the coming winter will be; but, of course, it behooves every man who wants to be considered progressive and straight, to be prepared for the worst. Many were surprised by the severe weather of last winter. Now, instead of presuming that this winter will be a mild one, let us make preparations for just such a winter as the last, or even a worse one. In regard to business for another year, let us be prudent, and use economy. I do not believe it is well to get into debt very much. A little money ahead, ready for such an emergency, or for any change that may offer for a good investment, is always wise. A man's powers, both of mind and body, are crippled when he is all the time crowded, and short of means. Make expenses come a little below the income, even if it takes almost a leg to fetch it. When you once get into the habit of saving a little every week or every month, you can do it just as easily, and with a good deal more satisfaction, than where you get a little more in debt every week or every month; and one who is hopelessly in debt is hopelessly a cripple, and a cripple all his days.

CALIFORNIA HONEY.

WE have just received a carload of honey from friend S. G. Miller, of Capistrano, Cal., which I believe is the finest honey, in every respect, that I have ever before come across. Of course, this is my taste; and tastes, you know differ. Well, with all its other good qualities this honey does not candy, even when exposed to the most severe freezing. You can fill large bottles and jars, and they will be just as limpid and transparent after standing a month in the window as when first put into the bottles. The honey is very thick and heavy. It comes in cans holding 58 lbs. each, and the price will be, can included, 9 cts. per lb. Two cans are crated in a strong box; and if you take one of these whole original packages you can have it for 8½ cts., or an even \$9.75. We also put it up in 5-lb. screw-top cans at 10 cts. per lb., can included. We also have it put in Muth's dime honey-jars, for sample package, to let people taste. It seems to me it should have an immense sale at these figures. We will send a very small quantity—enough to give you a taste—by mail, free of charge,

COMB FOUNDATION.

We have just purchased a large lot of fine beeswax at a bargain, which will enable us to sell fdn. very cheap for cash.

NOW IS YOUR TIME TO PURCHASE.

Our fdn. will all be manufactured on the celebrated Given press. Write for special rates to dealers and large consumers, stating how much you want, and what kind, whether thick or thin. We send sample of foundation free. Our Price List of

APIARIAN * SUPPLIES

for 1886 sent on application. Estimates given on almost all kinds of hives and frames. Address

KENNEDY & LEAHY,

24fdb HIGGINSVILLE, LAFAYETTE CO., MO.

DADANT'S FOUNDATION FACTORY, Wholesale and retail. See advertisement in another column. 3btfid

EXCHANGE DEPARTMENT.

Notices will be inserted under this head at one-half our usual rates. All ads intended for this department must not exceed 5 lines, and you must say you want your ad. in this department, or we will not be responsible for any error.

WANTED.—To exchange circular-saw machine for hive-making machine for making dove-tailed sections, light saw-mandrels, or bee-supplies, for extracted honey. Clover and basswood preferred. 24d D. S. HALL, South Cabot, Vt.

WANTED.—To exchange one-half bushel of extra fine white-clover seed for alsike-clover seed. 19tfdb M. A. GILL, Viola, Rich'd Co., Wis.

WANTED.—To exchange 40 acres of good hammock land on Manatee River, Florida, suitable for all tropical fruits, sugar-cane, vegetables, etc., for Italian bees; good bee country, no apiary within miles. Address F. SCHINDEL, 23-24d Fort Ogden, Man. Co., Fla.

WANTED.—To exchange supplies at low rates, for Partridge Cochins fowls. 24d W. K. LEWIS, Dry Ridge, Ky.

WANTED.—To exchange or sell. Friends, I have 15 pairs of the celebrated Bonney's stock of Brown Leghorns that I will sell at \$3.00 per pair, or will exchange for good beeswax at 25 cts. per pound. Circulars free. Ref., A. I. Root. 24tfdb A. H. DUFF, Creighton, Guern. Co., O.

WANTED.—To exchange, Scott's Commentary on the Holy Bible, 6 vols., quarto, bound in sheep, in good order, weight 19 pounds. As I have other commentaries, I will exchange this for something else useful. Address A. H. VAN DOREN, 24tfdb Liberty, Bedford Co., Virginia.

WANTED.—To exchange golden-willow cuttings for Italian queens. I will book orders now, and send the willows as early as will do next spring; queens wanted in May and June, 1885. 2 dozen cuttings for a warranted, and 4 dozen for a tested; also one weeping-willow cut with each dozen. Will send by mail. S. C. FREDERICK, 24, 5db Coal Vale, Craw. Co., Kan.

FOR SALE.—or will exchange for choice extracted honey, very fine Wyandotte cocks or cockerels (Houdlette's strain, Wellesley, Mass.), and my strain Houdans, crows or layers. It would be difficult to buy better birds, I think. J. EVANS, 23-24 Schaghticoke, Renns. Co., N. Y.

A BARGAIN.—10,000 FIRST-CLASS ONE-PIECE SECTIONS, 4 1/4 x 1 1/4, for sale in lots of 1000 or more at \$4.00 per M. (This ad. will appear but once.) Address 24d J. B. McCORMICK, Fredericksburg, Wayne Co., O.

HONEY COLUMN.

CITY MARKETS.

CINCINNATI.—Honey.—Honey market dull; no change in prices. CHAS. F. MUTH, S. E. Cor. Freeman and Central Avenues, Dec. 11, 1885. Cincinnati, O.

BOSTON.—Honey.—Best 1-pound sections, 14@16; best 2-pound sections, 12@14. Slow sale. No demand for extracted. BLAKE & RIPLEY, Dec. 12, 1885. 57 Chatham St., Boston, Mass.

CHICAGO.—Honey.—The demand is quite good for the best grades of honey, when in nice shape; 16 c. is about the market for 1-lb. sections; 14@15 c. for 1 1/4 to 2 lb. sections. Extracted honey in fair demand, 6@8 c. *Beeswax*, 20@26. R. A. BERNETT, Dec. 10, 1885. 161 S. Water St., Chicago, Ill.

CLEVELAND.—Honey.—There is a little better feeling, and best white 1-pound sections sell at 15 cts.; 2 pounds, rather slow at 13@14; second quality, and old, are very dull at 10@12. Extracted, 7@8. *Beeswax*, scarce at 22@25. A. C. KENDEL, Dec. 11, 1885. 115 Ontario St., Cleveland, O.

MILWAUKEE.—Honey.—The demand for choice white-clover section honey is very fair, and the supply not large. Dark honey is neglected and slow; can encourage shipments of white-clover, comb, in 1-lb. sections. Can quote white 1-lb. sections, 15@16c; dark colored, 12 1/2@14c; extracted in bbls. and kegs, 7@8c. *Beeswax*, 25@28c, choice yellow. Dec. 12, 1885. A. V. BISHOP, 112 W. Water St., Milwaukee, Wis.

FOR SALE.

One second-hand fdn. mill that will roll sheets 14 inches wide. The mill is at present in New Hamburg, Ont., Can. The original price on it was \$40.00, but we will now sell it at half price, or \$20.00.

A. I. ROOT, Medina, O.

WANTED AT ONCE, WITH MODERATE WAGES, WORK for 1886. Thoroughly versed in the bee-business. References furnished. 24d FRANK CURRIE, 1920 RIVER ST., Des Moines, Ia.

HAVING MOVED TO NEWARK, N. J. My friends will please take notice, while reading my advertisement, of the change of address. F. HOLTKE, NEWARK, N. J.

DADANT'S FOUNDATION FACTORY. WHOLESALE and RETAIL. See advertisement in another column. 3btfid

Recent Additions to the Counter Store.

THREE-CENT COUNTER.

Postage. (Pr. of 10, of 100)
6 | HAMMER, IRON HANDLE | 25 | 2 00
A hammer that will do a great deal of service.
1 | VIEWS FOR STEREOSCOPES | 25 | 2 25
Both American and Foreign. At this very low price we can not make selections, although when more than one is ordered we send no two alike.

FIVE-CENT COUNTER.

1 | GARDEN SEEDS, per paper | 40 | 3 00
A list with the names of the different varieties will be sent on application. Each paper of seeds is stamped 1886, and at the close of the season our seeds are all burned up, so that we commence each year with absolutely new seeds.

TEN-CENT COUNTER.

3 | FILE, HALF ROUND, 6-INCH | 80 | 7 00

FIFTEEN-CENT COUNTER.

12 | SAWS, FRET OR SCROLL, 12-INCH BLADE | 1 25 | 11 50
These are the same make of the Star hacksaws that cut iron with such wonderful facility. See the dollar counter.

3 | FILE, ROUND, 10 INCH | 1 45 | 12 50

TWENTY-FIVE CENT COUNTER.

1 | AX HELVES | 2 45 | 23 50

Best second-growth hickory. Nicely finished.

THIRTY-FIVE CENT COUNTER.

10 | FILE, ROUND, 12-INCH | 3 00 | 25 00

ONE-DOLLAR COUNTER.

16 | CLOCK, LEVER MOVEMENT | 8 50 | 80 00
A very nice time-keeper, named "Whistler." Each clock is carefully tested and regulated by ourselves.

A. I. ROOT, Medina, Ohio.

HONEY AND BEESWAX.

We are now in the market, and will be during the entire season, for all honey offered us, in any quantity, shape, or condition, just so it is pure. We will sell on commission, charging 5 per cent; or if a sample is sent us, we will make the best cash offer the general market will afford. We will handle beeswax the same way, and can furnish bee-men in quantities, crude or refined, at lowest market prices. Our junior member in this department, Mr. Jerome Twichell, has full charge, which insures prompt and careful attention in all its details.

Sample of comb honey must be a full case, representing a fair average of the lot. On such sample we will make prompt returns, whether we buy or not.

CLEMONS, CLOON & CO.,
Kansas City, Mo.

EXTRACTED HONEY,

16 TO 20 CENTS PER POUND.

The Canteen honey-package is so funny, everybody wants to eat from it. Will sell like hot-cakes during holidays and all winter. Samples of 5 and 10 cent packages, filled with honey, sent by mail prepaid for 25 cents. Send for price list and full description, and set your honey booming. Address

2td **JOHN H. MARTIN, HARTFORD, WASH. CO., N. Y.**

FOR SALE.

400 COLONIES OF BEES.

Will exchange for good horses and mules.

ANTHONY OPP,
Helena, Phillips Co., Ark.

MUTH'S HONEY-EXTRACTOR, SQUARE GLASS HONEY-JARS, TIN BUCKETS, BEE-HIVES, HONEY-SECTIONS, &c., &c.

Apply to **CHAS. F. MUTH, CINCINNATI, O.**
P. S.—Send 10-cent stamp for "Practical Hints to Bee-Keepers."

LOOK HERE!

To introduce my strain of pure bright Italians, equal to any in the United States, I will offer tested queens, \$1.00 each; extra fine, selected, \$1.50 each; one-frame nucleus, consisting of one extra select queen, one frame of brood, ½ lb. bees, for \$2.00. If you want any bees, send me your address on postal and I will send you sample by return mail. Beeswax or honey taken in exchange.

THOMAS HORN,
Box 691, Sherburne, Chen. Co., N. Y.

**DADANT'S FOUNDATION FACTORY, WHOLE-
SALE AND RETAIL.** See advertisement in another column.

SECTIONS.

Western headquarters for bee-men's supplies. Four-piece sections, and hives of every kind, a specialty. Flory's corner-clamps, etc. Orders for sections and clamps filled in a few hours' notice. Send for sample and prices.

M. R. MADARY,
Box 172. Fresno City, Cal.

WE WILL SELL

Chaff hives complete, with lower frames, for \$2.50; in flat, \$1.50. A liberal discount by the quantity. Simplicity hives, Section Boxes, Comb Fdn., and other Supplies, at a great reduction. We have new machinery, and an enlarged shop. **Italian Bees and Queens.** Send for Price List.

A. F. STAUFFER & CO., Sterling, Ills.

DADANT'S FOUNDATION

is asserted by hundreds of practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sag, most regular in color, evenest, and neatest of any that is made.

It is kept for sale by Messrs. A. H. Newman, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; F. L. Doughterty, Indianapolis, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Ezra Baer, Dixon, Lee Co., Ill.; E. S. Armstrong, Jerseyville, Illinois; Arthur Todd, Germantown, Philadelphia, Pa.; E. Kretschmer, Coburg, Iowa; Elbert F. Smith, Smyrna, N. Y.; C. T. Dale, Mortonsville, Ky.; Clark Johnson & Son, Covington, Ky.; King, Aspinwall & Co., 16 Thomas St., New York City; C. A. Graves, Birmingham, O.; M. J. Dickason, Hiawatha, Kan.; J. W. Porter, Charlottesville, Albemarle Co., Va.; E. R. Newcomb, Pleasant Valley, Dutchess Co., N. Y., and numerous other dealers.

Write for samples free, and price list of supplies, accompanied with **150 Complimentary and unsolicited testimonials**, from as many bee-keepers, in 1883. We guarantee every inch of our foundation equal to sample in every respect.

CHAS. DADANT & SON,
3btfld Hamilton, Hancock Co., Illinois.

BEE-HIVES, :: SECTIONS, HONEY-BOXES, ETC. GREAT REDUCTION.

All Dealers and large consumers will find it to their interest to write us for special stocking-up prices, either for present or future delivery. 16tfdb

G. B. LEWIS & CO., WATERTOWN, WIS.

THE CANADIAN BEE JOURNAL. WEEKLY, \$1.00 PER YEAR.

D. A. Jones & Co., Publishers, Beeton, Ont., Can.

The only bee journal printed in Canada, and containing much valuable and interesting matter each week from the pens of leading Canadian and United States bee-keepers. Sample copy sent free on receipt of address. Printed on nice toned paper, and in a nice shape for binding, making in one year a volume of 832 pages. 9tfb

LEGS AND ARMS

(ARTIFICIAL)

WITH RUBBER HANDS AND FEET.

The Most Natural, Comfortable and Durable.

THOUSANDS IN USE.

New Patents and Important Improvements.

Special attention given to

SOLDIERS,

Ill. Pamphlet of 160 Pages

SENT FREE.

A. A. MARKS,

701 Broadway, New York.

Please mention this paper.

VANDERVORT COMB FOUNDATION MILLS.

Send for samples and reduced price list.

JNO. VANDERVORT, Laceyville, Pa.

BLACK JAVA COCKERELS.

A few fine birds for sale at \$3.00 each. Warranted to be as good as the best. 23,24,1,2d.

S. M. DARRAH, Chenoa, Ills.

Wanted. Situation with some bee-keeper. Have had three years' experience.

W. C. WRIGHT, Reagan, Falls Co., Tex.





Vol. XIII.

DEC. 15, 1885.

No. 24.

TERMS: \$1.00 PER ANNUM, IN ADVANCE; 2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00, 10 or more, 75 cts. each. Single Number, 10 cts. Additions to clubs may be made at club rates. Above are all to be sent to ONE POSTOFFICE.

Established in 1873.

PUBLISHED SEMI-MONTHLY BY
A. I. ROOT, MEDINA, OHIO.

Clubs to different postoffices, NOT LESS than 10 cts. each. Sent postpaid, in the U. S. and Canada. To all other countries of the Universal Postal Union, 10c per year extra. To all countries NOT of the U. P. U., 42c per year extra.

OUR OWN APIARY.

OR, RATHER, THE TEMPERATURE OF MOTHER EARTH; SUB-EARTH VENTILATION.

MR. G. M. DOOLITTLE touches upon a point that is of considerable interest to me; namely, the temperature of Mother Earth. He calls in question whether 55°, as deduced from Mammoth Cave, is true of all other localities (see page 856). I accordingly consulted a number of philosophies, physical geographies, cyclopedias, and other works that might bear upon the subject. None of these touched upon the particular point in question, and I then came to the conclusion that the temperature of Mother Earth is a relative term which is not uniform in all localities. However, I found that the temperature of artesian wells, to a depth of 2000 feet, is nearly uniform, with one or two exceptions. This temperature at this depth is about 80°; and one artesian well, in Paris, I think, is used for heating purposes.

After searching in vain in the various works treating on the subject, for the temperature of the earth within a few feet of the surface, I determined to institute a series of experiments myself, and, if nothing more, ascertain the temperature of the earth in Medina. Under our bee-hive factory is a well. The lifting-pump to said well will force a stream of water higher than the factory, and, of course, it would take but a second or two for the water to come from the bottom of the well to the surface of the ground. In consequence, the temperature of the water would be of about the same temperature as the ground at a depth of 97 feet. After the pump had been running about two hours, the piping and the pump itself would become of the same temperature as the water. When the

pump had been thus running we turned a jet of the water, right from the bottom of the well, into a pail. Into this I plunged a good thermometer. On remaining there a few minutes the mercury showed 56°. To be more sure, another thermometer of different make was tried, with the same result.

There is another well in the factory, used for drinking purposes, whose depth is 30 feet. After pumping perhaps half a barrel of water from this I tested the water as before, with two thermometers, and the result showed 57°. I would say, that this well is entirely inside the factory, and covered with flagging-stone, so that the temperature outside can not affect it. Thus it will be observed, that the temperature of Mother Earth under our factory very nearly tallies with that of Mammoth Cave, which is 55°.

I next tested the water of our cistern at home. After pumping out considerable water as before, and testing, the mercury showed 49°. The cistern is pretty closely covered, but I presume enough frost went down through the open chain-pump to sink the temperature five or six degrees.

In Cleveland last year, during the severe winter, the water-pipes, in some cases to the depth of 4 or 5 ft., froze solid. This being the case, I should suppose that, under ordinary winter weather, the sub-earth ventilator, being placed to a depth of 3 or 4 feet, would not give a temperature much above the freezing-point; and in order to get any thing like 45 degrees of heat we should want our ventilators placed at a depth of 8 feet, as some have recommended. To get 55 degrees of heat we must go to a depth of at least 40 feet, and probably more. This might not be true of all places, but I feel quite sure it would be of Medina.

I have shown that the temperature of Mother

Earth at Medina is very nearly that of Mammoth Cave; but in order to get at the temperature here, we must go down 40 feet or more. The well Mr. Doolittle mentions must be very cold — only 11° above the freezing-point in summer. Is this true of other wells in the same locality?

Now, I should like to know how nearly uniform the temperature is in other places, at a depth of 50, 75, or 100 feet. If we are to advise sub-earth ventilators for bee-keepers and others, it is important to know whether this advice is to be taken generally, or applied only to particular localities.

BOTTLING UP HONEY FOR MARKET.

Perhaps some of the friends are aware that we are bottling some of that carload of California honey in the 5-oz. Muth jars. These jars are to be sold to Butler Bros., of New York, as a neat ten-cent article of honey for their counter trade. A day or so ago I noticed one of our men, while putting up this honey, using an implement like the one figured below. The corks to the jars were too large for the mouths of the bottles, and, in consequence, they had to be compressed by some means until they fitted. The implement as shown in the cut will explain itself. You observe that we grasp the handles with the right hand, much in the way we do a nut-cracker. Next, with the cork in the left hand place it in the hole as shown; then while twirling the cork around so as to have it uniform, press upon the



CORK-PRESSER.

handles with the right hand. You notice that there is nothing particularly new in this device; in fact, it is the same thing that druggists use, only this is a home-made implement that any one can make. It is constructed as follows:

Procure a piece of wood (hard wood preferred), 2×3 by about 18 inches long. Near one end bore an inch hole half through. On the other side bore a similar 1½-inch hole, suited for larger corks. Next rip the piece through the middle of the strip with a rip hand-saw, in such a way as to cut the holes in halves. Fasten the ends near the holes with a common door-hinge; the other ends, whittle off for the handles. The implement is now complete, and operates like a nut-cracker. The cut shows the position of the holes after the piece is ripped. You can now fit corks to your honey-jars as well as the druggist, and the whole expense is but a trifle.

ERNEST R. ROOT.

REVERSING DEVICES.

SHALL WE USE REVERSIBLE HIVES OR REVERSIBLE FRAMES.

IN your reply to the article entitled, "Reversing the Hives instead of the Frames," page 771, Nov. GLEANINGS, you suggest that we "go a little further and have frames made without any projections at all to the top bars, in order that the frames may be lifted out when the hive is turned over." Now, if this were done, or even could be done without the grave difficulties alluded to, where would reversing the hive come in? However, we confess that we have lost some sleep trying to get rid of a small piece of the top bar of said frames, that seemed to stick out very prominently

at times, and be in the way, while at so many other times they were "such a handy thing to have about," as Toodles remarked about a second-hand coffin he had purchased. Still, notwithstanding all this, we have never been able to get along, as yet, without the nice little projection at the ends of the frames, and they must be at the top at that. If you are very anxious to have a frame such as you mention, you will have to get after friend Benton again (see page 552, Aug. 15, 1885). May be he can help you out of the difficulty.

We have figured it out in our own minds, that his reversible frame is certainly long enough to just fit inside of the hive, and slide down flush with the end, resting upon strips attached to the bottom of the hive in such a manner as to support the frames and preserve the proper distance from the bottom-board. Whether this is the way it is done, or, if so, whether it is practical or not, remains to be seen. Nevertheless, one thing remains certain; viz.: the necessity and utility of reversing frames at the proper time, and for certain purposes, seems now to be generally conceded. The bee-keeping friends are ready for it, and the great question to determine is, not whether we shall reverse our frames or not, but, how shall it be done, at the least trouble, by the quickest method, and at the least expense? Shall it be done by reversing the frames alone and singly, or by reversing the hives, and by this means turning all the frames at one operation? Now, since this matter of reversing the hives, being still in its infancy, has not been as fully brought out as reversible frames, nor perhaps as well understood, and because you, friend R., started the ball to rolling when you told us about reversing the Simplicity, let us fully investigate its claims, pro and con; and if there is nothing in it, of course it will turn out differently from "Banquo's ghost."

Now, in order to bring out the matter in the clearest light, let us suppose a case in practice. If reversible frames should be decided upon, by some one owning an apiary of 50 to 100 colonies in ten-frame hives, and the bees all were comfortably installed on movable frames having the regular orthodox projecting top-bars, in order to convert them into reversible ones, the necessity would arise of purchasing or manufacturing 1000 to 2000 reversing devices; the removal of 500 to 1000 frames of comb from the bees, a few at a time, to a place suited to work at them; the sawing or cutting off of 1000 to 2000 projections, together with the fitting and attaching of the same number of said devices, and then returning them to their proper places! Now, the question is, Would this be a very easy and practical undertaking at any other time than early spring, or even then would it pay for the expense and trouble? Who has done it? On the other hand, suppose he should adopt reversible hives instead of reversible frames, to accomplish said purpose. How proceed? We answer, first have ready a few reversible hives to commence the work with. This can be done by fixing over hives that are on hand and empty, making them reversible; or if none are on hand, making all the new ones on the new plan that are going to be needed, then proceed to set a colony in each one, then fix over those thus emptied, and so on, until all are completed.

Now for the questions. How easy is this plan? how practical? how expensive? how much better than the other method? We will presume to answer as follows: Very much easier; much more practi-

cal; a great deal less expensive; and, in our opinion, as good, if not better, save in the one instance of not allowing the frames to be removed while the hive is turned over until it is turned back again. We do not presume to know how much of an objection this would be to the average bee-keeper, or whether any, but are inclined to think that it would all depend upon how often occur the necessity and occasion for removal at the particular time the hive is thus reversed. It is not presumed that the hive shall be turned up very long at a time, if we thoroughly understand for what purpose and when it should be done.

Now as to the question, Can our hives that we now have in use be easily altered to be reversible ones? We think that the most of the kinds in use can be, and at very little trouble and expense. We remodeled about 80 this spring. HEMPHILL & GOODMAN.

Elsbury, Mo.

A PLEASANT REMINISCENCE OF CHILDHOOD DAYS.

A SAMPLE OF A BOX-HIVE MAN.

FRIEND ROOT:—Our first business transaction dates Jan. 11th, 1883. In connection with business as one of your Western customers, you will probably know the name. As I have as yet obtained no great distinction among men as an apiarist, or any other vocation, you may consider my scribbling of little consequence, and lay it aside, or consign it to the waste-basket. Be this as it may, I will proceed to give an account of myself, and the progress made in our "chosen pursuit" throughout my locality.

My father was a bee-man before me, hence you can throw the mantle of charity over me, if I appear too enthusiastic. He emanated from Kentucky soil, and pitched his tent in the exact locality of the writer, in the spring of 1828. Civilization was then battling with the red man and wild beasts of the forest. Settlements were very sparse, and those twenty miles distant were considered neighbors.

Within a dozen rods of our present residence is the site of the old log cabin. Two little mounds are all that remain to mark the location. The two mud-and-stick chimneys that have long since fallen to decay leave the only monuments to the memory of the pioneer days of our parents. How my memory reverts to the many incidents related by my parents, while they were occupants of this rude domicile, of how the wolves howled, panthers screamed, night-owls screeched, and many unaccountable noises made nights hideous! how they had to make tight coverings over their pigs, to prevent "varmints" from carrying them off; how, within an hour or two hunt, they could secure the best of venison and wild turkey; and frequently within a stone's throw of the cabin; how they lived for months on venison, hominy, and wild honey, with an occasional abridgement of johnny cake and sassafras tea.

It was in those days that we might date the dawn of bee culture on the Hambaugh homestead. Captured in the wilds of the forest, and with the proverbial "log gum" prepared, the increase soon brought its reward, and a primitive apiary was the result. Under the supervision of my father the bees were a source of considerable revenue. Being

a man of strong constitution and indomitable energy, the surrounding forests gradually gave way to fields of waving grain. The old log cabin was eventually superseded by a large residence; and ere his death the "iron horse" was traveling through his possessions, and the landscape was transformed into a beautiful panorama. The onward progress of civilization had worked wonders, and none were so well calculated to realize it as those who had endured the drawbacks and privations of early pioneers.

Never has the old homestead been entirely destitute of the busy bee. The "hum" used to gladden the heart of my father; and though the modes of management were those of the primitive days, he took great pride in them, and many a barrel and keg of strained and "mush" honey has been sent to market. Within my own recollection I have seen old-fashioned "log gums," that would require three or four men to handle, carried from the brimstone-pit to the old house, where its contents were disposed of. The harvest, which took place the first cold weather in winter, usually lasted a week or ten days, and the wax was by no means a small factor in the enterprise. An old resident in our neighborhood states that he paid for eighty acres of land with money obtained from beeswax alone.

It was always a source of pleasure for me to assist my father with his bees; and as he grew old, the care of them gradually fell to me; as the bees were considered a matter of minor importance, no special pains were taken, other than to have plenty of "gums" in readiness for the swarms, and when they issued, hive them, place them in a fence-corner, and let them go till the harvest came around, then what the moth-miller had not destroyed we would confiscate, except sufficient for the next year's increase.

It was about four years ago that I took my first step forward in the art of bee culture, and I must confess it was a very short one. I took no broader view of the art than to follow those of my own knowledge who were the pronounced bee-men. An elderly gentleman of our county, by the name of Walsh, was the pronounced bee oracle, and I partook freely of his instructions, which were something of this order: "You are bound to give the bees room for their surplus fat, the natural accumulations from the under part of the abdomen"—a terrible dagger to comb foundation. He says the extractor is a humbug, and has done more to degrade the honey market than any other one thing, and ought to be abolished. He is also adverse to the use of sections for surplus honey. He also states the Italian bee is far inferior to our native blacks, and are fit for nothing but to rob, pilage, and sting. He says father Langstroth is a humbug; that the movable-frame hive was in use a century before him. He laughs at the idea of building up weak colonies with brood from the strong, to avoid moth. He has been puzzling his brains for years over an effectual moth-trap, which he claims to have perfected, and a queer device, too complicated to describe, can be seen under every one of his hives. He says that nectar does not emanate from flowers, but from the elements, and falls like dew; and, were there no flowers, bees would gather honey from church-steeple and house-tops. I could relate many other cranky notions of this respected gentleman, but this will suffice to show how far some can wander who will not

accept of any standard works or bee-masters as superior to their own frail and crooked ideas.

This man was my tutor for one year, and I was foolish enough to use a few of his hives, and, of course, you can believe my first step a short one in advanced bee culture; and up to this time I had never seen the inside of a bee-book. I had often heard of Langstroth's work, and was anxious to learn something of the hidden mysteries of the bee-hive. I chanced to receive a sample copy of the *Farm Journal*, in which I found an advertisement from A. I. Root, asking all who were interested in bees to send him their names. I complied, and received your catalogue in return, and it was but a short time ere the ABC was at hand. With this able work I felt a new impetus, and, with the addition of Cook's Manual and Dzierzon's work, I flattered myself as making broad strides in the right direction. The old hive was soon superseded by the eight-frame Langstroth hive, and, still later, all have been transferred to ten-frame Simplicity hives, where they are going to stay.

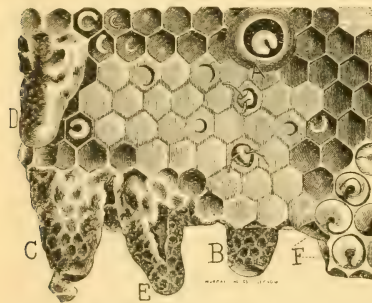
In connection with what I have gained from our leading bee-periodicals and standard works on bee culture, I have visited several apiarists of note, chief among which are the old pioneers in the profession, Chas. Dadant & Son, to whom I am indebted for willing and wise counsel. Long may they live! I have prolonged my remarks further than intended, and I fear trespassing on your valuable space.

Springs, Ill., Nov. 25, 1885. J. M. HAMBAUGH.

QUEEN-CELLS.

LARVÆ, AND THEIR DEVELOPMENT.

FOR some time we have been trying to get a good cut of queen-cells and brood for our ABC book; and after several trials our engravers have at last succeeded. The veterans will recognize the different cells as shown below.



QUEEN-CELLS AND LARVÆ.

D, whose surface is smooth, and does not show the usual network, contains only a drone-larva, instead of a young queen. A is a queen-cell just started; B is a cell further on in its stage of development. C is a cell from which a queen is just hatched, and to which the little hinged cap still adheres. E shows a cell that has been torn open by a young queen. This opening shows evidence that the bees had assisted her after she had made a small hole. In this connection I would say, that when tearing

down unnecessary cells I rarely take the trouble to destroy them wholly, and hence I merely pierce a small hole with the knife or a straw, and leave the bees to do the rest. F shows the grubs, or larvæ, and which are seen scattered in various places. Below A is sealed brood, and here and there young bees just gnawing out. These young bees are not so good as the rest of the engraving.

While upon this subject I shall give a brief review of the development of the larvæ, as set forth in the admirable work of Frank Cheshire. Huber, Réaumur, and others, claim that the grub does not change its skin in the process of development. Cheshire claims that this assertion is a mistake; that the skin is non-elastic, and that in a short time, becoming bad fitting, it bursts, and is cast off. In like manner this is replaced by a new skin, and so on to the probable number of five.

This was a new idea to me. On consulting the authorities on the silkworm I found that it also casts off a number of skins. As the silkworm is the larva of the moth, if we reason from analogy we are led to suppose that the larva of the bee may cast off its skin also. Frank Cheshire states that a careful investigation will show the ruptured pellicles in the bottom of the cells; however, with my Coddington lens, Boush & Lomb instrument, and dissecting-tools, I failed to discover more than one pellicle. Perhaps I am not skillful enough; but because I do not succeed in finding them I am not prepared to say they are not there. Briefly, then, the development of the larvæ as given by him, is this:

The grub, after casting off its several skins, packs them in the bottom of the cell, together with the excrement given off by the grub. The last pellicle it packs around the cell, and then completes the inclosure with its silken web. This leaves the cell nice and clean, and the grub has now only to grow. Microscopical examination shows that this case, cocoon, or whatever we may call it, is not a mass of fibers, as we might expect, if it were simply the web of the larva. On the contrary, it has the appearance of a skin, or pellicle, of the worm. Had it not been winter weather after procuring a larva from the hive, I would have skinned him and compared this with the lining of the cell. If the microscope showed they were identical in appearance, I should be compelled to believe that Mr. Cheshire is correct.

When the weather permits I will push this matter a little further. If good authorities have been mistaken for so long, it is time we put ourselves to rights.

ERNEST R. ROOT.

WINTERING IN THE SOUTH NOT SO EASY.

LEAVES FOR PACKING.

FRIEND ROOT:—Though this is a rather late day to send in my report for last winter, I should like some of the veterans who have lost so heavily to know how a novice has succeeded in the all-important subject of wintering. Fall count, 18—17 strong, 1 weak (a cluster covering only 4 frames). The 17 colonies had from 30 to 50 lbs. of honey each, just such as they had gathered from the field. The weak one was fed up on unfinished sections, after frost had fallen. Spring count showed that I had not lost a colony, although one-half of them were weak, caused from

dysentery. Eight of my colonies had a quilt, made of a common corn-sack that cost only 6½ cts. each, over the frames, and without an exception they came through clean and dry, not a sign of dysentery; even the colony with only four frames came out all right. The remaining ten colonies had a honey-board on; and, with two exceptions, they had dysentery badly. The upper story of each hive was packed with forest leaves, as suggested by J. E. Pond, Jr.

Many may think that it is a very simple matter to winter bees as far south as this; but when I tell you that from one-third to three-fourths of each apiary was lost the past winter in this county, you will not think it such a simple thing to winter successfully. The tropics are away south of here, for we had plenty of zero weather last winter. From 6 to 14 degrees below was not unusual. Pollen was abundant in every hive; but I am of the opinion that it would have been better had there not been so much of it present. My bees were left on summer stands, with a wind-break of cornstalks about 6 feet high to protect them from the north winds.

Now, friend Root, I should like to have you tell me when is the best time to move bees; also how to prepare them for shipment. Don't you think in March or April would be the best time? I shall move from here to Bowling Green, Ky. You remember the place, of course, as you passed through it on your way to the World's Exposition. Your description of the cave was very interesting, and, strange as it may seem to you, although I have lived within 30 miles of the great wonder all my life nearly, I was never in it. We are apt to care very little for wonders near us. E. W. STATTON.
Martin, Tenn.

Thanks, friend S., for your kind letter. The subject of moving bees is so fully discussed in the A B C book that it would hardly be advisable to go over it here. I think March or April would probably be the best time. We should try to avoid either extreme—very hot or very cold.

REPORTS ENCOURAGING.

FROM 25 TO 50, AND ABOUT 13,000 LBS. OF HONEY.

MARCH 1, 1885, found me with 25 colonies of bees—two-thirds Italians, one-third black. I increased by natural swarming to 50. By May 1st I stopped all swarming by extracting and cutting queen-cells after above date. I finished extracting to-day, November 10th. I had 1000 gallons of honey, all extracted from top story, the bees having their winter supply since June, in lower story of 10 frames, from basswood. I bought a new belt, and shall wear it until somebody does better. Let him report, and I will send said belt by first mail. JOHN W. ROSS.
Velasco, Brazoria Co., Tex., Nov. 10, 1885.

Why, friend R., your report is a tremendous one. Estimating 11 lbs. of honey to the gallon, we find you received about 260 lbs. on an average from each of your original 25. Good for Texas!

BEES PAY LIKE OTHER STOCK.

My report for this year is not large, yet every year convinces me that bees can be made to pay as well as any other stock on the farm; and as to

the sale of the honey, when put up in good shape, it will sell about as well as butter. Spring count, 17; increased to 35; good condition; comb honey, 600 lbs.; extracted honey, 600 lbs.; all, 1200 lbs. Sold 700 lbs., nearly all at home. O. S. DUGBY.
Kingsville, Ashtabula Co., Ohio.

FROM 14 TO 26, AND SOLD \$90.00 WORTH OF BEES AND HONEY.

Last spring I lost my entire apiary of 66 colonies, fall count, except one queen and about a teacupful of bees, which, by careful nursing, I built up to a good strong colony during the season. I sent to friend Foster for 14 nuclei, which I built up to good colonies, and increased during the season to 26 good strong stocks. We got no surplus here till about the last week in August, then we had a nice little honey-flow of some three weeks. The result of my summer's work foots up thus: 14 nuclei increased to 26, all in good condition for winter; sold \$50.00 worth of bees, and have \$40.00 worth of fine thick honey. While this is nothing to boast of, still I am satisfied, all things taken into consideration.

J. W. MARGRAVE.

Hiawatha, Kansas, Dec. 4, 1885.

"IF AT FIRST YOU DON'T SUCCEED, TRY AGAIN."

I have been a reader of your paper for several years. Though I have been in the bee business only two years, I will give you my report for the past season, but it will hardly be fair to give it and say nothing of last year's work.

I came here from Ohio in April, 1884; bought 50 colonies at \$5.00 per colony; increased to 65, and took 800 lbs. of honey; purchased 14 more in the fall, at \$3.00 per colony, making 79 in all. A great part of their stores was honey-dew. About all survived the winter; but spring dwindling set in, and left only 47, 4 of them queenless, and most of the others weak; but by feeding and extra care, I got them into fair condition. By the commencement of the white-clover flow they increased to 84, and took 3700 lbs. honey—1400 extracted, 2300 comb. I have sold, up to the present time, \$420 worth, and have on hand \$60.00 worth. I have tried Heddon's plan for preventing second swarms, and I succeeded very well. I have also used his crates, but prefer a modification, and a plain honey-board, making the bee-space in the bottom of the crate instead of in the honey-board.

Beginners can save money by making chaff cushions out of burlap, such as yarn, cotton batting, etc., are shipped in. I get it of the dry-goods merchants, and the material for my cushions costs less than a cent each.

I find gloves acceptable occasionally, in the fall, while handling cross hybrids, and have a pair made of firm brown ducking, with openings for my fingers to extend through, nearly to the second joint. The bees will not sting it as they do buckskin. Our sources of honey here are the old reliable white clover; and for fall supply, the Spanish needle, which grows abundantly here in the bottoms, sloughs, and low ground, and yields a rich yellow honey, resembling poplar honey in appearance and flavor.

Bees are plentiful here, and I have been surprised at the amount of honey brought in here for sale from old box hives, which speaks well for the country as a honey section.

B. A. RAPP.

Chillicothe, Mo., Dec. 6, 1885.

AN AVERAGE OF 75 LBS. OF HONEY PER COLONY.

I commenced the winter of 1884 with 30 swarms; 2 starved—the first I have lost in wintering for five years. I commenced this season with 28; have taken about 1600 lbs. in sections, 500 lbs. with extractor—an average of 75 lbs. I have now 41 swarms, after doubling back. Best yield, about 175 lbs. in sections, 25 extracted; lightest, 50 lbs. in sections. I winter one-half in chaff hives on summer stands, the rest in cellar.

C. H. BOYD.

North Monroe, Waldo Co., Me., Dec. 7, 1885.

REPORTS DISCOURAGING.

100 HIVES, AND NOT ENOUGH TO WINTER ON.

I HAVE 104 hives of bees; had about 100 in the spring. They haven't gathered enough to winter on. I have fed them about 500 lbs., and will have to feed about 200 more in the spring, so you see that it is all loss this season. The hard cold winter in the spring, and the dry weather, killed the clover; buckwheat was not very good.

Amity, N. Y., Dec. 4, 1885.

J. W. UTTER.

DISCOURAGING TO A NEW BEGINNER.

My expectations in the bee-business have utterly failed. I shall not get over 10 or 15 lbs. of box honey, from 16 hives. What do you suppose is the reason they did not make any more honey? I had buckwheat, and a great variety of flowers, besides quite a lot of the spider plant all around our place, besides being right alongside the woods. My honey so far has cost me about \$5.00 per lb. Of course, the brood-chamber has all they will need for winter and brood-rearing; but from the account of so many bee-men, about bees filling the hive and turning off such quantities of honey in one season, it looks (after my first season's experience) rather dubious.

I got, in the spring, 6 box hives, and increased to 17 (one dwindled or died), and I now have 16 hives of bees, and took honey from only two of them, and I am out about \$60.00 on the bee-business. This does not look very flattering, does it? Still, I expect to increase them until I get 100 colonies or more, if I can possibly raise the money to buy the Simplicity hives, for I don't like any other.

R. J. WATERS.

New Madrid, Mo., Nov. 2, 1885.

FALSE STATEMENTS IN REGARD TO THE HONEY BUSINESS OF OUR COUNTRY.

As a protection to our bee-keeping population, we propose in this department to publish the names of newspapers that persist in publishing false statements in regard to the purity of honey which we as bee-keepers put on the market.

THE following I copied from the editorial department of the New York Weekly *Witness*, issue of Sept. 3, 1885, page 6:

"Honey has become so adulterated now that there is no pleasure to the fastidious in eating it, as you do not know whether you are eating a mixture of glucose and honey, or the pure unadulterated article. Virgin honey in the comb, as manufactured by the bees, is most delicious; but nowadays the bees are saved the trouble of making the comb, and a manufactured article is put in for them to fill with honey, and you do not know in eating it whether you are eating bee-made comb or man-made comb, a tough and indigestible mass. Let us have pure honey, Mr. Bee-keeper!

It is a reply to L. Starr, Mallory, N. Y., an intelligent bee-keeper, if I mistake not. Mr. Starr is probably not a reader of GLEANINGS, or he would, or should, have sent you this item himself, together with his own letter in the *Witness*.

The above, considering the source, and the position as a Christian teacher of the author, may justly be styled "a pious fraud."

JOHN D. GEHRING.

Park College, Mo., Dec. 4, 1885.

Thanks, friend G., for kindly calling our attention to this matter. It does seem to me really awful, to see papers like the *Witness* listening to sensational newspaper canards until they lose their own senses. Now, dear friends of the *Witness*, will you not be kind enough to as publicly correct the false impressions you have given, and admit that you were mistaken? My offer of \$1000 is still open, to any newspaper editor, or anybody else, who will tell us where comb honey is manufactured without the agency of bees. I appeal to you as Christian men to make a little reparation for the injury you have done a class of honest and hard-working people. You have GLEANINGS as an exchange; and by reading the numbers for a few months back, especially the articles under the department that heads this, you can see how hard we have been laboring to get even simple justice. No one should buy honey without seeing that the name of the producer is on the package; and if you do this, I am sure you will not get either liquid honey nor comb honey that is a fraud. This quotation from the *Witness* is the one referred to on p. 647, Sept. 15.

The following is clipped from the *American Analyst*:

HONEY.—You are correct about the prevalence of adulterated honey. Comparatively little of the article bearing that name sold in retail stores is genuine, even the wax cells being often skillfully and fraudulently imitated. We noticed in the last number of the *London Analyst* that a correspondent warns analytical chemists against American honeys, which he says are being adulterated with a syrup manufactured with maize, the method being kept secret. His own experience shows, however, that if wheat or maize starch (not potato starch) be treated with oxalic acid or any other powerful organic acid, a syrup is produced, which, in a certain concentration, and after standing two or three weeks, exactly resembles, in taste and appearance, an old honey. It seems a shame to cheat the busy bee out of the reward of his patient industry.

If any journal should be truthful and reliable in matters of this kind, it seems to me that one with such a name as the above paper, hailing from 176 Broadway, New York, ought to be that one. Now, friends of the *American Analyst*, we call upon you to correct your unwise and very positive statement. If anybody in the world ought to be careful what he says, it is an editor; and for an editor of a scientific paper to thus help on a fraud is lamentable. Will you not please add, friends, that it is a mistake, and that you were misinformed? If you think there is such a place, where wax cells are imitated, as you say, just hunt it up, and your \$1000 which we offered last month is ready now. Yes, it is now \$1500. You will please prove you were right, or else take back what you said.

MORE ABOUT HONESTY AND HONEST WARES.

STRICT BUSINESS PRINCIPLES.

THANK you, friend Root, for the credit you give me, of both kinds, for my last article, Oct. 15. Bless your heart, I should like to give you a great deal more of the same kind, if you can have patience with me. I meant to add, that Mr. Wright said he must make the mistake concerning that honey "right with the old fellow," and I have no doubt he did. I can generally tell by the way a man says such a thing whether he means it or not. Can't you?

Mr. E. went to a shoe-shop to get his boots mended. Mr. D., the cobbler, had not been long settled in M., and he was not acquainted with E., neither did he know Jim S. as well as his neighbors did, until he had lately found him out. E. wanted Mr. D. to mend his boots, and E. would bring him wood in payment. Mr. D. said he would take the wood, but he would have to have it before he did the work. E. was rather taken down, for he had never been taken up that way before. Mr. D. explained that he had done some work for Jim S. on such an agreement, but the wood had never come, and he could not afford to run another such risk. E. replied, "I do not blame you. But I will give you a load if you will go out and find one man who will not tell you that I will bring you the wood if I promise to."

At this juncture Mr. B. stepped into the shop, and E. stated the case.

"You mend his boots," said Mr. B.; "and-if he does not bring you the wood I will pay you for it." Mr. D. mended the boots, and E. hauled him the wood. Who would you or I rather be—E. or Jim S.? Why, bless you, E. possessed what was worth more than any \$30,000 that Jim S. might gain—a good name.

It is not every man who would scorn to tell a lie for a thousand dollars—who would feel insulted if offered a bribe—who is clear of little, petty, secret deceptions. It is the subtle form in which temptations often come that constitutes their chief danger. Many men who regard themselves as quite honest will cheat in a horse-trade by failing to mention some little blemish, or will, if a man pays him a little too much change, keep it. "He made the mistake; let him learn to be careful." Such things seem to me very dishonest. In no way is one more often tempted than to sell an article slightly inferior, for a good price. To produce a really first-class article at a high price, even at it, may be, some pecuniary loss, is a kind of honesty as worthy as any. Speaking of E. led me to the above thoughts. He has always sold his wood a little higher than any one else around here; yet there are a number who prefer to buy his wood. It is the same kind of timber, but is all of full length, well split; and he gives, as we often term it, "Methodist measure."

E. once made some railroad-ties for a horse-car road. One of the company said, as he examined them, "I have but one objection to them; that is, that the rest are not all as good as these." He did not make as much money as other contractors, perhaps, but he earned what was better. I repeat nearly what I said before: To produce a first-class article—an *honest* article, if you please, is to win a golden name—an honor which is as well earned, and may be as proudly worn, as any the world can

offer. It is a prize worth having, if nothing else is involved. I am far from estimating the value of a good name in dollars and cents alone. To be justly esteemed by others is a great boon: to be justly esteemed by myself is a greater one. On the contrary, to be dishonored by others is only better than to be dishonored by myself. All these things are involved in this matter.

I once went into a drug-store to get a glass of soda. While drinking, the druggist stepped into the back part of the store. Hidden from his view by the apparatus I could easily have stepped out; and when at length he came to receive the money I jocosely told him so.

"Oh! well, now, you wouldn't have done that. Why, you would have felt worse about it than I should."

I thought, "You are right, Mr. D.; I *should* have felt worse. And no matter what I might slip out of or slip into, if I should do such things I should know myself to be a slippery man, and others would know it, and I would to that extent lose the respect of myself and all true, honest men. I prefer to be honored and trusted by myself and others, at whatever sacrifice."

I once accidentally overheard a whispered remark concerning myself: "He is as honest as the day is long." I felt, not vain, but proud. If I am honest, I am amply repaid for it. I am a poor man, and discontented with my lot; but I would rather take poverty with honor, than the wealth of Jay Gould with all its attendant blessings, and the name he has acquired with it.

But I do say, that honesty in all things will pay pecuniarily. Rogues sometimes prosper more than any honest man can. But usually the reverse is the case. E. rejected a number of wood-choppers, to employ a man whom he knew would do a good job—a species of honesty. It paid that man to be thus honest. I know that the growing business of Mr. Wright, before mentioned, is very largely due to the fact that he is known to be trustworthy.

The propensity of some men to make false promises, or thoughtless promises, which they make no effort to fulfill, is very annoying. Either one is a kind of dishonesty—the former, a bad type of it. The one who practices such deceit is sure to lose the confidence of his customers; and to do that is to lose both reputation and business. I once wanted a job of nice work done at a planing-mill in S. I gave the order in the forenoon, and the material was promised by three o'clock. I got there a little after time, and, so far as I could tell, my order had not been yet touched. The boss came and told me that they did not have all the lumber necessary to fill the order, and had had to send for it before they could do the work, looking anxiously into the back room as he said it. Did you ever see a boy try to sneak out of a room with something under his coat that he wanted to hide? Well, that man talked just as such a boy would act. I believe that excuse was a pure fabrication. He could hardly see how to excuse himself, it appeared to me.

"How long before the stuff will be ready?" I asked.

"About fifteen minutes."

I went away, and returned in about half an hour, to find a man sawing at some boards that looked like mine; but surely mine were done. I looked at them and then at the boss, who said nothing until spoken to.

"Is my stuff done yet?" I asked.

"No; don't you see it is not?"

I felt insulted. How did I know that stuff was mine? I rather thought it was, for he said mine would be ready before that time. He felt mean or he would not have talked that way. I said nothing; but by keeping watch over him the stuff was ready in fifteen minutes. I intended never to patronize that man again, and I did not until I had hunted the city over and found that I could not get what I wanted anywhere else. I went back to him because I had to. I had to send after the stuff. He gave me more than he at first thought he could, he said, for the money. It came to me in a bundle; and when I unpacked it I found the raggedest lot of lumber I ever got. Such patching as I had to do! For some kinds of work the stuff could not have been used at all, and the boards were not as thin as I wanted them, or as they would have been if I had been there to watch him. To call such a man a liar and a cheat may seem harsh terms, but they are the simple truth. I think I shall send off for my stuff next time, even if I have to pay more for it.

I am not through yet, but I must stop. I expect this will go into the waste-basket, after all; but I can sell honest honey; I can keep my word; I can tell the truth, all the same, confident that in the long run honesty is the best policy.

GEO. F. ROBBINS.

Mechanicsburg, Ill., Nov. 25, 1885.

Friend R., I do think it pretty harsh to call even a bad man a liar; and if you will excuse the liberty, I am afraid you are a little inclined to uncharitableness. I used to think it was the right thing to do, to face a man and denounce him as a liar and cheat, when the circumstances seemed to warrant it; but for some little time lately I have decided that such a course so often does more harm than good, that I have resolved to be very careful about doing it any more. Further back you make the remark, that rogues sometimes prosper, etc. Now, if you have the correct definition of the word "prosper" in mind, I do not believe that rogues ever do prosper. They sometimes get money, but so does the highwayman; yet, would you want to stand in his shoes? Show up fraud and deceit unsparingly, but let us be mild and careful in our denunciations.

ARRANGEMENT AND POSITION OF THE STORES FOR WINTER.

A WINTER-NEST.

I READ, in the department of Our Own Apiary, in GLEANINGS for Nov. 1, the following: "It was just in this way that we wintered our bees last year with, however, the exception that they now have honey instead of sugar stores."

Now, I think I see another very important difference. Last winter, if I mistake not, you arranged your hives and then fed syrup. This allowed the bees to place their stores as they saw proper. This year your plan gives them no choice. I believe it essential to have what Mr. Doolittle calls a winter-nest; that is, a space containing no stores in the combs on which the bees cluster. I would rather have my bees separated by a division-board than by a solid frame of honey. I fear that your only chance of success this winter is that your bees may

have time to consume or remove the honey from this space before very cold weather. In our climate we often open hives through the winter, and always find them arranged with the winter-nest. If stores are sufficient, we do not average a loss of five per cent.

W. H. GREER.

Paris, Tenn., Nov. 24, 1885.

Friend G., I think it quite important that the bees have this winter-nest; that is, that the bees shall cluster together in the form of a sphere, in empty cells, and then that there should be food enough so it entirely surrounds them, above and below, to the right and left, in front and rear. Our most successful wintering has been when things were in this shape, and I admit that heavy feeding just before winter seems to get this state of affairs best. Our bees have such an abundance of natural stores, however, that the conditions are pretty nearly in this shape as it is. In our locality we never have too much honey in the hives for winter, because they have ample time after the honey-flow ceases, to consume enough to give them this brood-nest. In speaking of heavy feeding, I mean that, although you feed heavily, several days will be occupied giving enough for winter.

ANOTHER FLORIDA APIARY.

MISERY LOVES COMPANY.

SEEING reports in GLEANINGS from so many places, I am moved to write an account of my own apiary, even if I have come so near getting into Blasted Hopes. The article on page 774, by that California "bee lunatic" gave me some comfort. By the way, is it not rather curious, when a person is out of luck, feeling out of humor with his surroundings, and about half displeased with himself, how quickly it will raise his spirits to hear of somebody who has not done so well as he has? I have a notion to sermonize a little right now, instead of writing about bees, but I will curb the inclination, and just say, in that line, when you have the blues, and feel as if every thing were going wrong, and you might as well quit trying, or any feelings akin to those, stop, collect your thoughts a little, look around, and see how much better you fare than somebody else. More than likely you are faring much better than a majority of poor suffering humanity.

I commenced last year with 15 stands of Italian bees, which I brought from Iowa. They increased to 42, and we took 1650 lbs. of honey, nearly all extracted. I thought I had found it, and solved the problem how that hungry spell from a pine woods to a bearing orange-grove could be bridged over, at least for my family. But, alas! how uncertain are earthly things!

Last spring we started in with 40 stands. I had sold two, and left the 40 on their summer stands, with the upper stories on. They were in good condition, and commenced swarming in April. Dry weather set in about this time, stopping their supplies so they stopped swarming; and by middle of May there was less honey in the yard than when swarming commenced. It now set in wet, raining nearly every day for three months, very little honey could be stored, and only occasionally a new swarm came out. I was bothered a great deal by

loss of queens, some hives being supplied the second or third time, and, what I am most ashamed of, three colonies were lost by moths before I got them supplied. I might have saved them by timely care.

The moth is a terror here to native bee-keepers who have the common bee in old-fashioned hives; but it is a comfort to me to see how quickly the Italians will carry them out by the back of the neck, when I put a frame infested with them in the middle of an upper story of a populous hive. There is no trouble from the moth, with good management. As yet I have found no trouble with any other enemy.

We finished extracting for this year on the 18th, and find we have taken, all told, 1000 lbs. of honey; about 150 lbs. of this was comb honey, partly in sections. I found great difficulty in getting them to work in sections. They much preferred storing honey in comb already built. They sent out eight swarms, three of which flew away. One was doubled up with a queenless colony, leaving, after deducting for what was lost, an actual increase of one. The honey is worth about 11 cts. in this market; 1000 lbs. at \$110.00, one new colony \$6.00, \$116.00.

I am very thankful for this much, and am going on my way rejoicing, and expect to do better next year; and if I don't, I still expect to keep bees, for it has paid even this year.

This country is high dry pine land, no swamps or hammock land nearer than four miles, about as uninviting bee-pasture, it seems to be, as there is in Florida. It will be much better in a few years, when the 40,000 orange-trees within two miles of here are full of bloom. There are many kinds of flowers in the woods and fields, but I am puzzled to know where they get the great quantities of honey they stored sometimes last year.

I find a banana-plant makes a nice shade for bee-hives. One plant will shade two or three, by setting them at different points of the compass. The leaves die in the winter, letting the sun in when it is cool. When warm weather comes again, and shade is needed, it is ready, with its great broad leaves, to make a refreshing shade. There are many good points in Florida for the bee-keeper, besides where friend Hart lives. There are many of these places where the business is entirely undeveloped, and a little well-directed energy by men well posted will surely bring its reward. It is no small thing to be entirely clear of the work and loss connected with wintering, which our Northern bee-keepers are subject to. FRANCIS TRUEBLOOD.

Archer, Florida, Nov. 27, 1885.

A DISEASE OF THE BROOD THAT IS NOT FOUL BROOD.

DESICATED BROOD; ITS CAUSE AND CURE.

ON page 734, Nov. GLEANINGS, Mr. Dwight Furrer asks me to "give further light on the subject." The desicated foul brood that he refers to has two distinct types, or, as may be classed, a contagious and a non-contagious type — that is, so far as I can ascertain from all the investigation that I have been able to make through the seasons, beginning in 1878, up to the present fall. I have not known of a season since my first observation of the plague but that I have

been able to investigate several cases of either one or both phases of the disease.

The non-contagious type I have, to my full satisfaction, traced to a trouble of the queen, or an hereditary trouble from the drone mating, as I have found it only in the worker-brood; thus I concluded it was from the deficient vitality of the drone-sperm, as a constitutional weakness. I had once thought that it might be, as inferred by a recent contributor to the pages of GLEANINGS, a venereal disease; but as such diseases are copulatively contagious, I withheld such a decision. Finding the non-contagious type always in a locality where there were plenty of degenerate black or hybrid bees, and quite often it appeared in brood of a mis-mated Italian queen; therefore I attributed it to the drone mating, and I can not see any reason to not credit it to the devility of the drone sperm; and yet if the drone-brood had been affected in the same way there would not have been a chance to locate it on the vital weakness of the drone; therefore your decision of the change of the queen is a substantiation of my conclusion, and the successful practice shows the theory to be a true one in the case of the non-contagious type, and also the strongest proof to be obtained of the deficient vitality of the drone-sperm, which can be in part accounted for in two ways, as presenting itself through various observations that also bear on the subject of my article on page 732, same issue of GLEANINGS, concerning queens, and I will try to make it plain, as I see them, in an article at some future day.

THE CONTAGIOUS DESICATED FOUL BROOD I found to be contagious, and for three or four years I tried to obtain help from many prominent apiarists to find out something about it, and have never yet received one line of information, either pro or con, except in 1879, two letters from Mr. T. G. Newman, and I had given up all hope of any light from any one. I have kept on nursing two or three colonies for the past seven years, thinking I might yet find out all about it, and occasionally I find localities where it has wiped out a whole apiary; and by putting healthy stocks on to the same ground, the disease always showed itself the second season. That the disease was present, I have proved by the destruction of at least 50 colonies that I have used of my own for that purpose, and always taking them from perfectly healthy localities so far as I could learn, and using new hives and virgin combs built on foundation as thoroughly clarified as I knew how to do it.

Another curious fact is, that a thorough scouring of hives and frames and fixtures with strong salt and water, just wiped out all contagion when the contagious desication has developed into a genuine, rotten, stinking mass of the capped brood when carried into strong healthy stocks at mid-summer, and proves that the caution given, page 504, A. B. J., 1883, was not without reason.

The two phases are so similar in early stages, that the novice would not notice the difference. First an occasional grub, when nearly ready to cap, will turn yellowish, growing darker for two or three days, and perishing against the side of the cell, though not always the lower side. From four to six days are consumed in the drying-up process, and then if the comb is held a little slanting in the strong sunshine a dirty sediment will be seen at the lower side of the bottom of the cell, and will

sometimes hold together to be picked out in a chunk, with a dissecting instrument. The contagious type is more firm than the other; and if a quantity is put into a cultivating-glass, and soaked up, it will grow into a thick leathery mold at about 86°. The other seems to be a dust. The contagious type is the longest in its transformations, and in many cases the larvæ are capped, but the pupæ never develop. They never have with me, and I have one case of it now, if it has not been found by other parties and destroyed, though I think there is no possibility for that.

I think that thorough investigation will show as many as six describable diseases of the brood, and that the most virulent type will yet be more manageable than a sitting hen, and less to be dreaded than either the lead-colored or red-lice-like insects that I have tried for three years to bottle for Prof. Cook, but I can not succeed, though I find plenty of them. Who else has seen the "varmints"?

South Kent, Ct., Dec. 21, 1885. H. L. JEFFREY.

Friend J., if there are really six different kinds of diseases of the brood, I sincerely trust that the most of them are not very common. I do hope that foul brood may become as "manageable as a sitting hen," but I confess to a good deal of anxiety on the subject. I have recently learned from different sources that foul brood is raging badly in the vicinity of Toledo, O., and that large honey-producers are selling the honey from foul-broody colonies, to be scattered here and there. Now, then, friends, this is indeed a serious matter. If a single package of that honey should be thrown out in the yard, after the contents have been used for food, and bees from anywhere get access to it, foul brood will be introduced, and I do not know why we should not soon have it everywhere. From your description, I do not see why you should say the disease you have is not foul brood. Is it not near enough like it so it will come under most of the rules to be observed in ordinary foul brood?

ABSORBENTS IN WINTER.

SHIPPING-CRATES.

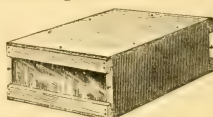
ON page 824, Mr. Robbins solicits some "reasons for the faith that is in me" regarding the above subject. On these pages he correctly quotes one of my statements regarding my opinion of the value of absorbents. Without consuming space in detailing the many examples that have forced me to regard moisture, of itself, not unfavorable to the health of our bees during winter confinement, I will say that numerous have been the cases coming under my observation, both in outdoor and cellar wintering, that force me to such conclusions.

The great factor for consideration, I believe to be temperature; and danger comes from the falling of the same. Humidity demands a higher temperature, which, if supplied, renders it harmless, its only ill effects being secondary, at the most. Prof. Cook's allusions to this question in his Bulletin No. 8, are statements that accord with my observations and experiments.

The best report of outdoor, or, I might almost say, of any kind of wintering during the past se-

vere winter, we receive from Drs. Southard and Ranny, of Kalamazoo, Mich. Their apiary of over 100 colonies was all outdoors, all packed with chaff, not extraordinarily thick, all with covers tightly glued on the hives, and suffered no loss. If Bro. Robbins could hear these clear, practical apiarists detail their continued experiments with absorbents vs. no absorbents, stating results, he would see just why they have discarded all of their costly cushions.

I trust that the readers of GLEANINGS have not forgotten that Mr. R. I. Barber and many others of our most successful "winterers" consider moisture either no detriment or a benefit. The reason why I said I believed upper absorbents were oftentimes "worse than useless," was because their adjustment is usually, or always, such as allows of greater radiation of heat than takes place where the packing is placed directly upon the tightly sealed board cover, and the consequent lowering of temperature is dangerous.



HUTCHINSON'S SIX-CENT SHIPPING-CRATE TO HOLD 14 SEVEN-TO-THE-FOOT SECTIONS.

I am pleased to note that Bro. Hutchinson can and will sell our shipping-crates at so low a price as 6 cents each. Here they cost more than that, and we are obliged to ask 10 cents each for them in any quantity. Even at that price we did not care to, and did not, supply them last season. In one sense you are quite correct in saying they are nothing particularly new. I have used them some five or six years, and will tell you how much I devised their construction. The first section-crate I ever saw came from New York and from Bro. Doolittle, if I mistake not. The glass ran the long (wrong) way of the crate. This glass was necessarily nearly as wide as the crate was high, and was held in place by sliding into grooves cut into the corners of the solid end-pieces. This crate held 12 two-pound sections. The two lights of glass cost more than Bro. H. charges for our little crate. This crate had to be handled wrong way to you, or have hand-holds cut in its solid ends. The latter course was chosen. The first change I made was to cut the notches for the glass in the side cleats, rather than the solid ends, and the need for only one-half as much glass was the result. I next applied the same principle to a two-story crate for 4½ sections, and this crate was illustrated in the *A. B. J.* early in 1878. In all these crates the combs ran the long way. When I began to confine the widths of my sections to a certain number to the foot, I saw that if I made a crate just a plump foot long, making the sides solid and the ends cleated for the glass, such a crate would embrace the following advantages:

1. It would hold just two of the four tiers held in our storing-case, and take them just as they came from the cases, if desired.
2. It would take three sizes of 1-lb. and two sizes of ½-lb. sections, fitting all perfectly.
3. While it shows the honey sufficiently to insure due respect from the carriers and satisfy the buyer, its construction is such as to cut the cost for glass down to a minimum.

4. With such a construction the end-cleats serve every purpose of hand-holds, and at the same time admit of carrying the crates in the most convenient position; also of carrying the combs in the safest position, which is to and from the carrier.

5. It shows off the honey to the best advantage.

6. As you say on page 756, a case thus constructed is light and durable, and better protects its contents from breakage.

7. Such small crates not only ship safer, but sell more readily. With them our commission men catch a great deal of retail trade, and our retail dealers often induce a customer to take a whole crate.

This is not all; but this article is getting long, and I desire to say that when these crates are made of white basswood, nicely dressed, they are handsome to look upon. Our experience teaches us that, especially with crates and sections, the best and nicest are cheapest. Trusting that your readers clearly understand the principles and advantages of the construction of the shipping-crate in question, it gives me pleasure to say to Bro. Hutchinson's inquiring friends, as well as to all, that I gladly grant to all the privilege of making any and all of my inventions or devices connected with this crate.

JAMES HEDDON.

Dowagiac, Mich., Dec. 7, 1885.

Very good, friend H., and I beg pardon for saying there was not any thing particularly new about this little case. Your seven reasons are all good ones; and while the case is nothing particularly new, it accomplishes a good many things that no other case accomplished in just that way before. You invented the case, and Bro. Hutchinson invented the six-cent price on it. We have had an engraving made, because our readers will catch hold of the special ideas so much better with the picture right before them. The question has been asked several times, if friend Hutchinson furnishes glass also with the six cents. We have replied that we thought he did not; but perhaps he had better so state it, in his advertisements or otherwise.

THE SOLAR WAX-EXTRACTOR.

THE HEAT OF THE SUN IN CALIFORNIA.

FRIEND J. P. Israel's description of his sun wax-extractor and its work (page 75 of GLEANINGS), is perfectly correct. If you will look at my article on "The California Sun-Strainer" (p. 339, current volume of GLEANINGS), you will see that it was formerly used exclusively for separating the honey from the wax, here. Even now it is indispensable to any California apiarist, as all the cappings (from extracting), all broken combs and scraps, and all comb honey, which from any cause has become unsalable, may be melted up, and the honey, wax, and refuse completely separated at one process. If a chunk of wax, or an empty new comb be left outdoors in the summer, in an iron pan, or in an inverted hive-cover, it will melt and soon become bleached to a snow-white. During the summer, the iron parts of a wagon or any other article or tool of iron will, in the middle of the day, become so hot from the rays of the sun that one can not take hold of it with the naked hand.

I have sometimes left a wooden paddle in the sun-strainer, and found it too warm for immediate handling. We have no need of steam wax-extractors here, except, perhaps, late in the fall, when the sun shines too obliquely to have full effect.

There has never, to my knowledge, been written an article on the sun-strainer, or sun wax-extractor, as you call it, which, as fully as the above-mentioned article of mine, describes the apparatus, its construction and use, and I think it will pay any one to read it over again, before attempting to improve on the original, or to invent something else for that purpose. No doubt, reflectors of bright tin, if properly attended to, would increase the effect; but if they are liable to be neglected, they had better be left off altogether, and the sun alone depended on to do its work through the glass.

WM. MUTH-RASMUSSEN.

Independence, Cal., Nov. 30, 1885.

Friend M., I beg pardon if I seemingly overlooked the great service you have done in describing the solar wax-extractor as you use it; but in reading your article we took into consideration the great amount of extra heat given off by the sun's rays in your State, as above, and therefore we did not feel certain that it was practicable here in our latitude. When friend Green informed us, however, that the heat of the sun is ample, right here in the North, as it were, it gave us an additional stirring-up; and while there is no need of reflectors or looking-glasses with you, it seems to me they would be quite a help here.

HUMBAGS AND SWINDLES PERTAINING TO BEE CULTURE.

MORE ABOUT " \$800 A YEAR " IN RAISING CARP.

IF our readers will turn to page 827 of our last issue, and read the communication from W. Baird, with our comments, then turn to page 829, and read "A Carp Swindle," by Milton P. Peirce, they will be prepared to connect the two after reading the following from the *Farm and Fireside* of December 1:

We caution our readers against a certain "U. S. Fish" company, nominally located at Columbus, O., and whose circulars are being distributed broadcast over the country, thanks to the gullibility of certain agricultural editors, who have given free advertising to this "Co.," through the medium of an innocent-appearing letter nominally written by one W. Baird, of Pittsburgh, Pa., in which is depicted the wonderful success a poor farmer has had in raising the mortgage from his farm by raising \$800 worth of carp on an eighth of an acre of land! It is simply a new dodge of the old J. M. Bain gang, of New Concord or Zanesville, Ohio. The gang, which under its various aliases of the "North American Poultry Association," the "U. S. Incubator Co.," etc., etc., has made a most unsavory reputation. The purpose of the present scheme is to induce gudgeons to send \$1 to the "U. S. Fish Co." for a "book" on fish culture. This "book," if it materializes at all, will be a pamphlet which might be worth 10 or 15 cents, if the matter it contains had any value, but which will in reality be worth just so much waste paper.

Will our agricultural papers please take notice? and if they have given publicity to this swindle, will they correct it by warning their readers accordingly?

VARIOUS MATTERS.

HOW THOSE BEES CAME THROUGH.

BEFORE me lies a card with this question on it: "Please tell us, through GLEANINGS, how the colony of bees you experimented with came through. See page 190, GLEANINGS for 1885." By turning to said page I find that the colony alluded to was the one in which I placed the thermometer the most times in getting the temperature of a cluster of bees in extreme cold weather. I there say, that I fear the experiment will cost me the colony, as they are getting quite uneasy, or words to that effect. Well, it turned out that this very same colony, which had stores of *honey and pollen*, being disturbed at least 12 times during the very cold weather of last February and March, proved to be one of my best colonies in May, and continued so throughout the year, giving me 112 lbs. of white comb honey and one new colony. Thus the advice, not to disturb bees in cold weather, did not apply to this colony; for in a few days after my experiments ended, I found them as quiet as any colony in the yard, and much more so than two-thirds of them were.

WHAT BECAME OF THE QUEEN?

The same questioner asks, "What became of the queen you placed under the Hill device over the colony? See page 231, of GLEANINGS for 1885." This alludes to the queen I took from a colony of bees just dying with bee-diarrhoea, which was put in a cage provisioned with Good candy, and placed in above, hoping to get her through to spring, as she was a very valuable queen. By the amount of food consumed, I judged she lived perhaps a month, but she had been dead some time when the weather admitted of my looking after her.

TEMPERATURE OF THE EARTH.

In the editor's talk on page 785 and 786 I see he places the temperature of the earth at 55°; and from what I read I judge that he gives that degree for the reason that he got the impression, either by actual knowledge or otherwise, that this was the temperature inside of the Mammoth Cave, in Kentucky. Now, while I know nothing of the temperature of the earth in Kentucky, I do know that 55° is not the temperature of the earth at 40 to 45 or less feet in depth, here in Central New York; nor do I believe it is in Ohio, where friend Root lives, so that his plan of using the heat of the earth for the growing of vegetables by means of sub-earth ventilation would not work here, I am confident. Five miles from here is a well 46 feet deep, at which I always stop and drink whenever I go that way in summer time. The means used for drawing the water is the "old oaken bucket," sang about in our childhood. Several times, both in winter and summer, a thermometer has been placed in the bucket and lowered into the water, which is from 38 to 40 feet below the surface of the earth. The temperature of this water has been found to be 41° in February and 43° in August, thus averaging 42° throughout the season, changing only two degrees between the severe cold of winter, and the extreme heat of summer. I also find that this is very near the temperature of my underground bee-cellar, when all is kept quiet and undisturbed; and if I recollect aright it is the temperature given of the earth in

Michigan, as given by Bro. Heddon a few years ago. I would naturally suppose that the earth in the Southern States, especially in Texas and Florida, would be warmer than where we have so much winter as we do here, which may account for the difference between Kentucky and New York. If I could have a bee-cellar which would give a steady temperature of 55°, without artificial heat, I should consider it a great acquisition.

Bordino, N. Y.

G. M. DOOLITTLE.

Friend D., I am rather glad to know that disturbing bees in mid-winter has not *always* been hazardous. May be, however, you handle them so carefully that you did not demoralize them as some less expert manipulator might do.—I am very glad indeed that you have brought up this matter of the temperature of the earth. I have had one other criticism on the same thing. One other friend says the mean temperature of the earth is 59 instead of 55°. Well, we have enough careful observers among our readers of GLEANINGS to settle this matter pretty conclusively. In regard to the well you mention, I should like to ask if you saw the temperature taken, and was the thermometer one that was reliable, or only one such as happened to be lying around? The well, you say, was 38 to 40 feet deep. In the Mammoth Cave we descended to a depth of several hundred feet. It is laid down in the physical geographies, that the temperature rises one degree for every 50 or 60 feet we go down into the earth. This, you know, might make all the difference.—No doubt you are right in saying that sub-earth ventilation would not give a temperature high enough for raising plants, and I thank you for the correction; but with a little aid from the heat of the sun, and occasional days when the outside temperature is above 42°, I think we could get along pretty well. Lettuce and radishes grow nicely at a temperature of only 45°.

FOUL BROOD.

ITS MANAGEMENT AND CURE.

FROM the *British Bee Journal* of Nov. 15 we extract the article below. I hope the editor of that journal will excuse me when I say that I think our friends across the water are to be congratulated on having so able a man at the head of their journal. Friend Cowan seems not only to be fully posted in every thing relative to the bee-literature of the present day, but he also seems to have at his fingers' ends all that has been said and written in years past, in regard to even the little details of bee culture. And this is most important for an editor. How else can he direct thought, and be able to judge of what is new and original, from that which has been gone over and over? The article was called forth from reviewing friend D. A. Jones's little pamphlet with the title of our heading. I trust it is indeed true, that the phenol method can be relied upon; but I confess that my faith has been somewhat weakened by the contradic-

tory reports from its use. I shall be very glad indeed to know that destroying colonies, by fire or otherwise, when afflicted by foul brood, is foolish and wasteful.

In this little pamphlet the author, who is well known as one of the largest and most advanced beekeepers in Canada, gives his experience of the treatment of foul brood by the starvation method. In his introductory remarks Mr. Jones says, that "much has been written and said on the matter." This is quite true, and perhaps more has been written and said on this very method of treating foul brood than on any other. As far back as 1767 we find J. G. Seydel, and in 1775 J. C. Voight, recommending a similar treatment. Then still later, in 1789, we find Bonner, and in 1790 Della-Rocca, both practicing it, and Quinby, in 1865, in his "Mysteries of Bee-keeping Explained," gives it as the only effectual cure. Since that time to the present, the same remedy, with very little variation, has been recommended over and over again. Although we have very little that is new to learn in the method, the pamphlet contains several interesting paragraphs which describe the appearance of brood dead from different causes. They are headed, Chilled Brood, Neglected Brood, Overheated Brood, Drowned Brood, Dead Larvæ or Brood, and lastly, Foul Brood. The descriptions are so clear that even a novice can distinguish between any forms of dead brood and true foul brood. Of chilled brood he says, "The appearance of this chilled brood, however, differs materially from that of foul brood: the larvæ are frequently found dead in all stages, from the egg to the perfectly formed bee just ready to gnaw out;" also, "that bees, almost fully developed, are found dead in the cells, retaining their shape and appearance, never sink back into that brown rosy matter which so plainly marks *foul brood*." Of drowned brood, he says that it occurs when colonies are placed on low ground, and when a sudden rise in the water overflows the bank of the stream, and the apiary is submerged. This brood differs from chilled brood, and, if not removed, becomes much more loathsome, and sometimes turns, he says, to foul brood, or to "what looks and acts so much like it that it must be at least a first cousin to it." He relates an instance of a man having 100 perfectly healthy colonies submerged during the months of August and September, and a large quantity of brood was drowned. The weather after this flood was warm and muggy, and all the colonies from which the dead brood was not removed became badly diseased. Salicylic acid and other remedies failed to cure, and Mr. Jones concludes that spores of the disease were in the honey, and states that "honey from the combs, when given to a healthy colony, produced the disease." He believes that "some diseases are started *de novo spontaneus*" (?), a belief that we do not share, as experiments by Tyndall and others have shown conclusively that there is no such thing as spontaneous generation, and that disease germs must exist before they can be propagated. In describing foul brood, the author says that it "is a disease *in the honey*, or, rather, that is where it appears to lurk." We confess, that, even under a powerful microscope, with a one-twelfth oil immersion objective, we have never been able to detect the spores of foul brood in honey, nor has Mr. Cheshire; and although honey has usually been supposed to be the medium through which *foul brood* has been propagated, we are not prepared to indorse the opinion that it is the only way. Mr. Jones says that "combs containing foul brood can not be used; at least, I have never been able to use them; no amount of doctoring that I could do would disinfect them." He says, freezing even at as low a temperature as 35° below zero did not kill the spores, and combs and honey after this freezing, when given to a hive, produced the disease, and warns bee-keepers never to attempt a cure by that method. Boiling the honey, however, for a few minutes, he says, failed to transmit the disease, and concluded by saying that, "after many trials, I proved beyond doubt that heat will kill the germs by which the disease is generated."

To understand the error of this reasoning, it is necessary to know something of the nature of the disease. In 1874, Dr. Cohn, than whom there is no greater authority, and whose classification of bacteria has generally been adopted, first pointed out that foul brood is caused by a *bacillus*, and subsequently Professor Schonfeld and others, as well as the recent experiments of Mr. Cheshire, have con-

clusively corroborated Dr. Cohn's statement. Now, we know that freezing destroys most bacteria, *except* the spores of bacilli, which, according to Dr. Klein, survive exposure to as low a temperature as -15° C., but that no spores survive a temperature of 120° C., so that we can quite believe that, at an ordinary Canadian winter temperature, the spores still survive. On the same authority we also know that most bacteria are killed if they are exposed for several hours to a temperature below 50° to 60° C. But here, again, the exceptions are the spores of bacilli, which require, according to Dr. Cohn, an exposure to the heat of boiling water for as much as half an hour before they are destroyed. Therefore ordinary boiling for a few minutes, as recommended by Mr. Jones, does not destroy the spores. We have no doubt that, in the hands of such an experienced bee-keeper as the author, this method has proved sufficiently satisfactory; and it is certainly an improvement on cremation, or total destruction of bees, hives, and combs, which Mr. Jones, having paid dearly for the experience, so severely condemns, having, if our memory does not deceive us, when foul brood first appeared in his apiary, sacrificed two or three hundred stocks in this way. But we would go a step further, and save not only the bees, but also combs and hives. Knowing as we do that the disease is caused by bacilli, we have simply to destroy these or prevent their development. Cold and heat will not do it; but salicylic acid, thymol, phenol, etc., prevent, even in great dilution, the growth of the micro-organisms; and practical experience has proved that, by using them, we can save whole colonies. We have known large apiaries, where foul brood was raging fearfully, cured entirely by means of salicylic-acid fumigation according to Hilbert's plan in one season, with much less trouble than any process of starvation could have done. Phenol, likewise, first recommended by Professor Butleroff in 1874, and subsequently by Gravenhorst, and latterly by Mr. Frank Cheshire, has also been proved to cure the disease. In the face of these facts we can not counsel our readers even to destroy their combs. In the last paragraph Mr. Jones recommends fasting, and describes his *modus operandi*.

His method is to shake the bees from the combs of the infected hive into an empty box, and to place a wire screen over the top, to close the entrance, and then carry them to some dark repository (a cellar if possible), turning the box on one side so as to have the screen at the side to allow the air to pass through. Darkness and a cool temperature are important, as also that the bees should be equally hungry. They are to remain in the dark repository until they show signs of hunger. This they will do in from four to six days, and they must be carefully watched three times a day after the third day, or they are liable to die very quickly. When sufficiently starved, which is known by some of them dropping down and crawling about in a slow, quiet manner, they are shaken in front of a hive prepared with some combs, and are allowed to run in just the same as a swarm. If there is no food in the combs the bees should be fed. The combs of infected hives should be melted into wax, and hives and frames boiled for a few minutes. The honey should also be extracted and boiled for a few seconds, and can then be given to the bees. The author further says he has never known the disease to be contracted by either queen or drones. Mr. Cheshire, however, has found both, as well as the workers, to contain bacilli; and Hilbert, in 1876, at the meeting of the German National Bee-keepers' Association held at Strasburg, in describing his method of treatment, stated that bees and queens exposed to the vapors of foul brood contracted the disease, and that the fungus (*i. e.*, bacillus) of foul brood could generate in the body of the bee. Even the ovaries of the queen have become infected. In twenty-five hives treated by Hilbert he found three such queens. We have ourselves found the juices of workers, when examined under a high power of the microscope, teeming with bacilli. We, however, recommend the pamphlet to our readers. It is written in a pleasant style by one of the most able bee-keepers in Canada; and they will find in it much to instruct, more especially the paragraphs describing the different appearances of brood dead from various causes. We thoroughly sympathize with his concluding remarks, that "Destroying colonies afflicted with foul brood by fire, or otherwise, we consider a wanton destruction of property."

In regard to foul brood lurking in the honey, I did not suppose its presence could be detected by the aid of the microscope; but it has been carried to healthy hives so many times by the bees robbing foul-broody colonies, it has generally been taken for granted that the contagion is carried with the honey. Feeding even liquid honey from foul-broody stocks has also repeatedly started foul brood, if I am not mistaken.

A DRONE-LAYING QUEEN.

A MICROSCOPICAL DISSECTION OF.—BEES STEALING EGGS.

ON the 15th of October, 1884, I packed in chaff or sawdust, on their summer stands, 16 strong colonies and 10 nuclei, of which I lost none during the winter. In the spring I sold four strong and two weak colonies, and lost one by robbing, while I was away from home. I was gone less than three hours; but during that time the colony was overpowered and destroyed. So I began the season of 1885 with 12 strong and 7 weak colonies. The latter I used for queen-rearing and for experiments. One of the experiments was to test the value of a drone-laying queen. In the fall of 1884 I received from Italy a very fine-looking queen, which the dealer said was a choice queen from his own apiary, and an excellent layer. She began laying in one week after her arrival here; but every egg, though laid in a worker-cell, hatched a drone. Thinking that she might have been injured in transit, and that possibly she would be all right in the spring, I gave her brood from other colonies, and wintered her. In February she began laying drone-eggs in worker-cells. During March and April I gave her colony several frames of worker-brood from other queens; then by placing empty drone-comb in the center of her colony I hoped to get some early drones. See did lay a few eggs in this comb; but with her queenly wisdom she insisted on going away from the center of the brood-chamber, and laying most of her eggs in worker-cells; but they all produced drones.

I kept her until in June, when I gave up the experiment, and destroyed her. On microscopical examination, the ovaries presented a normal appearance; but the spermatheca was empty and atrophied, appearing like a little knot or wart upon the oviduct. I have no doubt of the thorough honesty of the dealer from whom I obtained this queen. What caused her failure?

From the 12 colonies run for honey I obtained 600 lbs. of extracted and 500 lbs. of comb honey. Most of the extracted I have sold at 12½ cents per pound. Some I have retailed at 15 cents per lb. The comb honey I have sold mostly at 20 cents per lb., some at 25, the whole bringing \$185.00 here at home, or a little over \$15.00 per colony for those run for honey. From the 19 colonies, spring count, I now have 51 packed for winter.

I am testing the wintering qualities of the different races of bees by placing stocks from imported queens side by side, under as nearly identical conditions as possible.

Two experiments last season convinced me that bees can and will steal as well as sting—at least they can and will procure eggs for queen-rearing when no queen is in the hive. In looking through

colony No. 18 on the 25th day of last April I found they had neither queen nor brood. They were left as found, and on May 10th I examined them again, when I was surprised to find three queen-cells—one with a larva almost ready for capping (it was capped the next day), one with a larva not more than one day old, and one cell with an egg in, which hatched May 11th. There was not another egg nor larva in the hive save these three, neither was there any queen. Myself and two others looked carefully over the combs time and again. May 14th I gave the colony a frame of brood and eggs, and May 16th the cell that was capped on the 11th was found opened at the end in the regular way, while the two others were opened at the side. One had a dead queen-pupa in, while the other had been entirely emptied. I also found a fine virgin queen, evidently but a few hours old. May 26th she began laying.

LEVI C. JOHNSON.

Fountain City, Ind.

WHAT MUSICAL NOTE REPRESENTS THE HUM OF A BEE?

ALSO SOMETHING ABOUT THE FISH IN FLORIDA.

TELL Mrs. Chaddock that orange-trees bloom in February. If she wants to peddle oranges, she ought to be here now. The butcher brings them around every week in his meat-wagon, and sells them at a cent apiece, very fine ones too.

Ernest has begun to teach the juveniles to use their eyes. Tell them to use their ears too, and find out what note in the musical scale a bee hums on while gathering honey. If they know enough about music to run the vocal scale, do, re, mi, etc., they can easily determine.

When I was at the lake this morning, two bees came down for water, and one hummed on A, and the other on C.

How the juveniles would enjoy seeing the fish in our beautiful clear lake! They come rushing toward the bank, eager to be fed. One will dart off with a piece of bread in his mouth, and twenty others, perhaps, will chase him just like chickens, only their every motion is grace itself, and the sunshine glints on their sides and makes them shine like silver. They are of all sizes, from an inch long to eight inches. They leap half way out of the water, if real hungry, catching at the crumbs that float on top. They are bream and trout. The children are very careful not to frighten them, and I have seen the tiny ones eat out of baby's little hands, as she held the crumbs in her palm under the water. The larger ones are shy.

We had quite a large frost this morning, which turned the banana bushes black; but I notice the geraniums are all green yet. I have one in the front yard, ten feet around. The bees were carrying in pollen to-day, but I don't know where they got it. It was of a reddish yellow.

George asks, if he will write and tell you what note a bee hums on, will you send him Silver Keys? Stanton, Fla.

VISTA A. REDDING.

Thanks, my friend, for suggesting this matter in regard to the pitch of the note emitted by a bee's wings.—And so you do have frost in Florida, do you?—Tell George we will send him Silver Keys as soon as we get a new lot. We have disposed of a thousand, but I think we can easily use a thousand more.

WHAT TO DO, AND HOW TO BE HAPPY WHILE DOING IT.

Continued from Nov. 15.

CHAPTER IV.

Get wisdom, get understanding.—PROV. 4:5.

In these former chapters I have gone over many things in regard to heat, in order to give you a general idea of the many ways by which we may make use of the heat contained in the immense storehouse in the bowels of Mother Earth. Improvements are constantly being made in this matter of counteracting the frosts of winter, in some of the ways mentioned above, or by a combination of these different plans. Natural caves offer very great advantages indeed; and where they are near large towns or cities, I should say they could be very profitably utilized for furnishing constant supplies of air, warm enough for the purpose of growing many kinds of vegetables, or keeping domestic animals in comparative comfort.

There is still another plan, brought forward recently, of utilizing the heat from the warm or hot springs that are found in many parts of our country. The warm water of these springs can be conveyed in pipes under ground, so as to give us the advantages of a tropical climate, even in frosty regions. Where a warm or hot spring is found near to a large city or town, it ought to be very valuable for such purposes.

HEAT FROM THE CONSUMPTION OF COAL AND WOOD.

Most of us are so familiar with this kind of heat for warming greenhouses and buildings, that I need not dwell on the matter here. Besides, it will come up naturally as we get further along.

LIGHT.

We have already pretty thoroughly considered the subject of light, in connection with the heat from the sun's rays; in fact, the two are almost inseparable. In planning to secure the direct rays of the sun, however, for raising plants, we need a little more light than can be obtained from these direct rays. For instance, we want our plants close up to the glass, in order to get as much light as possible on all sides of them. If you were to permit the sun to shine into the back part of a cave, you would get enough heat, but not light sufficient. Even though the sun shone directly on to the plant, it would commence at once to stretch and reach forward, to "get out of the hole," as it were,

indicating its desire to get close up to the glass, or, if you choose, to get out where light would come to it from all sides. Our first greenhouse was built with a solid, opaque roof, on the north side. I did this, thinking that, as no sunlight could come directly through it, there was no need of going to the expense of glass. The result was, the plants under this north roof, although right in the sun, always leaned over to the south, and I was obliged to put them in movable boxes, which could be turned end for end every few days. On this account we want glass over the whole space above the plants, although the north wall may be opaque, and have double walls, with an air-space between them. To get all the light possible on all sides of our plants, we also paint every thing white. You will be surprised to see how much lighter a room becomes by whitewashing or painting all the objects or furniture white. Where plants are raised in the window, of course we have to turn them around to keep them from growing one-sided, and they do very well under this treatment, only it is somewhat laborious, where there are many boxes. Making a little room about the plants, and covering the walls with white paper, gives us more and better light. Sometimes hanging up white sheets around the plants will accomplish the same result.

As an illustration of what may be done with very cheap and common appliances, we take the following from the *American Agriculturist* for Jan., 1885. You will notice, also, that the friend who did it is occupied with office work, so that it was all done during odd spells that would probably have been spent in some sort of amusement that would have left no tangible result of any kind. It was to him a pleasure and a pastime, like building my monument.

STARTING A VEGETABLE GARDEN.

In the fall of 1883 I purchased some second-hand 4x6-foot common window-sash, at \$1.00 per sash, and built a lean-to structure on the south side of the barn, using four of the sash laid lengthwise for the roof, and two for the front side. The ends were sided up with matched inch stuff, allowing for a door at one end. Notches were cut through the cross-pieces of the top sash, to allow the water to escape. This gave a space inside of about 7 by 12 feet, allowing 2½ feet for the

two side benches, set three feet above the ground, and a pathway of two feet. On the side next to the barn were two benches consisting of two scantlings placed lengthwise, on which were shallow boxes filled with earth. This plan allowed of turning the boxes occasionally, so as to give each side an equal amount of light. About midway of the outside, or front, was a small self-feeding parlor stove, such as may be found among the second-hand stoves at almost any hardware store, and bought for five dollars. The stovepipe passed out through one of the apertures of the sash, fitted with tin, and extended upward eight feet, to give sufficient draft. A large amount of heat might have been saved by having the pipe run lengthwise of the building, though an even temperature of 60 to 70° was maintained during the daytime, and from 10 to 15° less each night. The fire was started Feb. 22, and never went out until May 5, consuming about three-fourths of a ton of coal. In this structure I started about 4000 tomato-plants, 2000 cabbage, and a quantity of pepper, celery, and lettuce plants. When sufficiently large, the plants were placed in hotbeds or cold frames outside. This enabled me to delay starting my hotbeds for such tender plants as tomatoes and peppers, until the latter part of April, and still have large stocky plants for outdoor planting by the middle of May. Early cabbage and cauliflower plants were transplanted into cold frames and made fine plants, "hardened off" sufficiently to set out April 20. My first sowing of tomato, cabbage, and cauliflower seed, was made Feb. 15. Subsequent ones were every four or five days. Plants of the later sowings were transplanted into cold frames, and protected at night with straw mats. The lettuce, besides being put into cold frames, was set out between early cabbages and cauliflowers in the open ground April 20, and made fine heads several weeks earlier than outdoor sowings. As I am engaged with office work during the day, the time devoted to the greenhouse was principally mornings before eight o'clock, a few minutes at noon, and at evening. The total expense of building the greenhouse and fixtures, heating, etc., was less than \$20.00, and my book shows a cash receipt, from plants sold, of over \$140.00. This includes receipts from late cabbage and turnip plants which were sown outdoors. The actual receipts from stuff started in the greenhouse show a profit of over one hundred dollars.

The time devoted to this work, besides being profitably spent, was more a pleasure than a task, as any one at all interested in horticultural matters generally takes enough pleasure in "watching things grow," to more than compensate for time and labor spent. I have gained many ideas from the past year's experience, which will doubtless greatly aid me toward greater success hereafter.

G. H. M.

WATER.

A good deal has been written in regard to watering plants; and my own experience has satisfied me that, to water successfully, we must imitate nature. Sprinkling the

plants constantly does not answer. In nature we have soaking rains, and then several days of sunshine; and I have never had any better results in watering plants than can be obtained by dipping the boxes or pots into a tub of water at about the proper temperature (say 55°, the temperature of the earth), hold them under the water until the soil is thoroughly soaked, then set them out to drain off. Of course, the pots or boxes should have ample arrangements made for drainage. Don't dip them again until the soil is found to be so dry that they really need water. Let them really *want* it, before you give them any more. Where plants are in beds in the greenhouse, flood the beds until the ground is soaked in the same way; then let them dry off. Circumstances must decide how often they are to be watered. If the sun shines every day, of course they will need watering a good deal oftener. The temperature of the room or the weather has also much to do with it. Sprinkling the foliage so as to wash off the dust, and keep the little breathing-pores in the leaves nice and clean, is, of course, a good thing. This imitates the dews of night. In watering plants outdoors we want to imitate the soaking rain; but, don't pour so much water right around the stems of the plants as to make a puddle, that will bake down hard. The usual way of watering, as they do in countries where irrigation is the rule, gives the best results. Make a little channel between two rows of plants; start the water in where the ground is highest, and let it run until it has soaked the ground clear up to the plants. Don't get on too much. Then turn it off, and wait until the plants really need water again. We usually prefer soft water to hard, though I can not see any particular difference, except that when the leaves and foliage are sprayed with hard water, it sometimes dries on them so as to leave a whitish precipitate. If a cistern is put in the center of your greenhouse, and all the water from the roof be conducted into it, it will usually give you all the water needed to water the plants. During severe cold weather, the water in this cistern may be warmed by a steam or hot-water pipe, and this will aid very materially in keeping an even temperature. The cistern may be under one of the benches; and if the water stands up within a foot of the soil above it, all the better. Such a cistern also aids in keeping a moist or slightly damp atmosphere.

SOIL FOR PLANTS.

What kind of soil is best for raising plants?

or, how shall we make or get the very best kind of soil? is a question that comes up constantly to young and old lovers of plants and flowers. So far as my experience goes, I believe I should place stable manure ahead of all other sources. Have it well rotted, so it can be raked up fine. If you can not get it well rotted, get what you can and rot it. Almost any experienced farmer or gardener can tell you what kind of stable manure is needed. Next, I believe I would have this stable manure composted, and mixed with decayed sods. Get sods from the roadside, or anywhere; pile them up in heaps until they are thoroughly rotted, and then mix them with your stable manure. In regard to the best kind of earth, I know of no better way than to get samples, in little boxes, of such soil as is procurable around you, and test it. I once got a wagon-load of earth down near the creek, that had been washed from a fertile hillside, or gradual slope. Some of them laughed at me for my pains, saying that my dirt was not good for any thing. But it grew plants better than any thing else we had. Woods dirt and decayed leaves are often collected with great care, and probably we shall find nothing better than decaying leaves. In view of this I think it is a very good speculation to rake up and pile in heaps all the leaves we can get hold of. Use them for bedding for the cow, horse, pigs, and even poultry. Cover the floor of the poultry-house with leaves to the depth of a foot, then scatter their feed in the leaves, and make the fowls dig it out. When the leaves get broken up fine they will absorb and hold the manure or the droppings from the fowls, so as to make them comparatively inoffensive; and the resulting compost is just the best kind of manure you can procure. If a peat-bog is near you, you can use vast quantities of peat in just the way I

have mentioned with leaves; but it should be thrown up in heaps or long ridges, to let the frost break it up fine and draw out the water. If your soil is of a kind that crusts over on the surface, and bakes, by stirring in the peat you can get rid of the baking, entirely.

Go all over your neighborhood; hunt up every thing that can be found, in the way of material that can be converted into manure. Get some experienced farmer (that is, if you are not an experienced farmer yourself) to tell you how much it would be safe to put in for old manure-piles; then when you have purchased them, scrape up carefully, with hoe and rake, the very ground on which the manure rested, and draw that away to put in your compost heap also. Get weeds, bog hay, and every thing you can lay hold on—refuse from the slaughter-houses, spent hops from the breweries (if you are so unfortunate as to have any such institutions near you), and waste material of every sort, in fact; and be sure you are not making a mistake. Make a test of all these things, as far as possible, before you buy any of them. Keep testing different materials and substances by growing seeds in little boxes, until you find what materials give the best results. Feel your way before you, as it were, so as to avoid making expensive blunders.

Now, before going further I wish here briefly to say something that touches on all the facts we have been over. In fact, it includes this matter of saving not only all the manures and fertilizers, but the summer showers and the winter snows, and all these gifts from God that are daily going to waste. It is, in short, a brief notice of a new book just published, entitled, "The New Agriculture; or, the Waters Led Captive," and we will take the latter part of the title for our next chapter.

CHAPTER V.

Can the rush grow up without mire? can the flag grow without water?—JOB 8: 11.

You will please bear in mind that the book was not received and read until after the foregoing was in type.

THE WATERS LED CAPTIVE.

This book, with the above title, has just come out within the last few weeks, and its author, Mr. A. N. Cole, of Wellsville, Alleghany Co., N. Y., is an enthusiast on the subject of growing plants. Although he is

a prominent character in political circles, he has, nevertheless, nearly all his life made the subject of plant-growing a hobby. When he was but a boy he got hold of the well-known experiment of growing a great crop of cucumbers in a single barrel. Perhaps many of our readers have tried it, and many more have heard of it. The way he did it was this: He procured a good-sized

barrel, sunk it half way in the ground, and filled it half full of round cobble-stones. On top of the cobble-stones was placed brush, then some straw, then a good deal of manure, mixed with nice rich earth. On this earth the cucumbers were planted in the ordinary way; and when the roots were long enough to go down among the cobble-stones, the barrel was kept constantly filled with water. Several conditions were necessary to insure the greatest success, so he made several trials of the process before he succeeded in getting nearly half a barrel of pickles from the plants that grew in a single half-barrel of compost. I presume the bung-hole of the barrel was left open, to guard against hurting the plants by too much water. In that case, if the earth should be soaked, no matter how wet, the surplus would flow out of the bung-hole, leaving the soil like any nicely underdrained soil, while the roots of the plants would always be able to help themselves to any amount of water required, by simply going down among the wet stones.

By the way, there seems to be something particularly attractive to the roots of plants in wet stones or damp gravel. Many of the friends who have practiced underdraining know how the roots will go down into these underdrains, and follow them for many feet. Friend Peirce, in his carp-book, speaks of the trouble he has had with outlets to carp-ponds, by the roots of the trees getting into the pipes, and filling them up. Well, there is nothing particularly strange about this experiment of raising great quantities of cucumbers with a little very rich compost and plenty of water. But here is the strange part of the experiment, and the one which fixed the attention of young Cole, and made this matter his life-study. That one hill of cucumbers in the barrel, during the hot days of July, when the plants were making their greatest growth, actually drank up *half a barrel of water, in only three days!*

Does it astonish you? Well, it astonished me somewhat; but when I gave our people at the noonday service an outline of friend Cole's wonderful invention, one of our men told me after dinner that he himself had done the same thing; but that, although he had not measured the quantity of water needed, he had no doubt that very rank, thrifty-growing vines, would take quite the amount mentioned. That is over 10 gallons of water a day, for a single hill of cucumbers. In other words, this one hill of plants drank up over three patent pailfuls of water

every 24 hours, or nearly half a gallon an hour; or, to get it right before us, a pint of water every 15 minutes. As it is likely that more water was used in the daytime than after nightfall, at some hours the amount perhaps exceeded even this. I have before called your attention to the fact that much of our garden stuff is largely composed of water. Green cucumbers may be 80 or 90 per cent water; and if the plant is going to yield bushels, of course it must have water to drink. Do you feel like saying, "Well, who wants so many cucumbers, any way?" I reply, strawberries, during the height of the fruit season, use almost as much water as cucumbers do; and friend Cole has been selling strawberries at a *penny apiece*, because they were as large as ordinary peaches; he did not raise them in barrels, though, and this brings us to the discovery.

A few pages back I talked to you about saving the rain and the snow, as well as the sunshine. Well, friend Cole has just "gone and done it." His garden is on a hillside, and he has made it to bud and blossom in such a way that the people of the surrounding country have got in the way of calling it "The Home on the Hillside." Our place is called "The Home of the Honey-bees," so you see there is something a little parallel in our experiences. For several years the idea has haunted me, that we ought to save the water that comes down from the clouds, store it up somewhere, and use it during our dry summers to give drink to our strawberries, cucumbers, etc. I talked about constructing a reservoir upon the hill near our house; but our land is so expensive here close to town that I could not well spare the room it would occupy. Besides, after I had got it made into a pond, it is expensive business running it over the land, even by the best system of irrigation. To see what had been done in the matter, I sent and got the little book, entitled "Irrigation Applied to Farms, Gardens, and Orchards;" but after studying the book for two or three years thoroughly, I became discouraged before I ever set about it. The author discouraged me by giving actual facts from experience, of the expense of irrigation after the water was obtained. You can not do it in one season so it will last, but it has got to be done continually. Friend Cole started out with the bold idea of *covering up* these reservoirs to hold the rain, and raising garden stuff *right over them*. I had thought of this too; but the expense required to cover a

small pond, so it would not break down and cave in, discouraged me again.

Shall I tell you how he does it? He just digs reservoirs across the side of the hill. These reservoirs are, in fact, nothing more than deep wide ditches. These deep wide ditches are then filled with round cobblestones, just on the plan of the cucumber-barrel. When he gets within 18 inches of the surface of the ground, he covers the cobblestones with thin flat stones, then he puts on brush, straw, etc., and then nicely prepared soil. Of course, this is to be done only where there is a clay subsoil that will hold water; but this condition can be found on almost every farm or garden. The depth, width, and distance apart of these reservoirs must depend on circumstances. But this new book recommends that they should be about 2 feet wide, $3\frac{1}{2}$ deep, and two rods apart, for farm purposes. For market gardens and small-fruit growers, they may be 5 feet wide and 5 feet deep, and not more than a rod apart. In that case the ground will all be thoroughly underdrained; and during the severest droughts he claims the growing crop will never suffer for water; for a reservoir, say $3\frac{1}{2}$ feet in depth, and three or four feet wide, placed under 18 inches of rich soil, if filled with water in the spring, would probably hold some part of it until along in the fall; that is, in retentive clay soil.

Each reservoir is to have its bottom on a level. For instance, you will commence on the highest point of land, if it is a hill or knoll, run your reservoir clear around, so it will be in the shape of a letter O with a spot of solid ground in the center, not to exceed two rods across. If the hill is oblong, of course your reservoir, instead of being in the form of a circle, will be oblong; that is, it is to conform to the lay of the land and the shape of the hillside. Now, one rod below this another similar structure is to be made. Now comes the question, How shall the overflow from the first reservoir pass into the next one below it? Friend Cole accomplishes this by means of some smaller ditches made in the same way, filled with smaller stone. These smaller stones are raked out of the soil when it is broken up fine, as it has to be for gardening and fruit-raising, and these smaller stones, or coarse gravel, act as a filter. The cross-ditches are a foot or two less in depth, and the surface of the small stones is covered with flat stones like the others, this flat-stone shingling being all of it at least 18 inches below the surface, so that no ordinary plow or subsoil

plow will tear it up. You will notice that the surface water filters from the first reservoir into the second; from the second into the third, and so on, until you come to the outlet. I hardly need tell an intelligent man that, if he puts the filthiest kind of water into the upper reservoir, by passing through so many gravel filters filled with roots of hungry plants, he would have nothing but the purest kind of spring water when it got to the outlet; and such, in fact, proves to be the case. The roots of plants are superior to any filter of charcoal, or any thing else, for removing all organic matter from the water that passes over it.

Those who visit friend Cole's garden on the hillside, and find strawberries as big as peaches, and plums as large as apples, a good many of them claim that his wonderful success is owing to the thorough way in which he digs the ground up, and makes it fine and mellow to the depth of 18 inches. This is in friend Terry's special line, as you may remember. Of course, while he is digging it up fine to get *out* the gravel, he also digs *in* a plenty of good manure, forest-leaves being one of his favorite products for fertilizing the soil. I presume he manures his five acres (for that is the extent of his little farm) very much as market gardeners usually make their ground; but he has obtained results away ahead of what market gardeners do.

Of course, friend Cole is an enthusiast in this new development, and very likely we should make some allowance for his enthusiasm; but for all that, I think he is destined to be called a public benefactor. As I have no means of testing personally his claims at the present writing, I can only state to you what seems to be sufficiently attested by many witnesses. Ground thus prepared and worked up is much less liable to the effects of frost than ordinary soil; for this large body of water so near the surface gives off its heat, and warms up the mellow soil above it. Secondly, his plants are rank and green much later in the fall than those on ordinary ground, and they also start out earlier in the spring. It seems to me likely that, if a natural spring could be turned into a reservoir, and allowed to pass down through, it would still further aid in keeping off frost. While heavy snows cover the ground, friend Cole says his strawberry-plants grow all winter, having their roots safely anchored among the wet stones in the reservoir. I suppose you are aware that steam has been used for years to furnish heat

for hotbeds, in place of fermenting manure. Well, with this arrangement, letting steam into the reservoirs, we furnish bottom heat for early plants very cheaply. If instead of water we say hot liquid manure, we have manure and bottom heat, just as they do with manure from hotbeds.

Perhaps I should add, before closing this subject, that friend Cole has a patent on the process; but after reading his book, I for one feel quite willing to pay him for the privilege of testing, say an eighth of an acre, on his system. Even if we do not use all his plans, I think we can, in this matter of growing plants and vegetables, made use of at least a great many of his suggestions. His invention seems to be providential, also, in a sanitary point of view; for these reservoirs take up and utilize all manner of filth, and standing water is out of the question. Only a few days before the book was received, I was feeling somewhat dissatisfied with our underdrains during this wet season, because it took them so long a time to get rid of the surface water. We wanted to bank up our celery, fix up our cabbages and turnips, and ridge up our ground so the frost could make it fine for us; but the ground was so wet and sticky everywhere, it seemed out of the question. After we have prepared our ground on friend Cole's plan, however, we can dig in it all winter if we want to. We expect to use the eighth-acre we are going to prepare, for raising early cabbage, celery, tomato-plants, etc.

Now, if some of you should write me and ask if I would recommend that you pay out money to go into this new kind of agriculture, I would say, unhesitatingly, *no*. If you can dig the trenches yourself, or if your men do it at times when they would do little or nothing else, by all means do it. Most of you probably have stones on your premises that you would be glad to get rid of, so you would certainly accomplish something in this direction. It certainly can not be any bad speculation to bury the stones that cumber your ground, where they will be out of sight and out of the way. For a garden-patch I would get a screen, or riddle, such as is used for screening coal, and screen or sift all of the ground in the garden, to a depth of 18 inches, or fix a small bed thus screened and pulverized, until you see how you like it. In working among plants, having the ground in beautiful order enables one to do more than double the amount of work; and all successful gardeners now advise manure without stint.

If we will only call to mind incidents familiar to most of us in regard to this matter, we shall see that it is not at all unreasonable. As an illustration, when we were planting our basswood orchard one end of the lot was disfigured by a cellar where a house had formerly stood. To fill the cellar up, we picked all the stones off the field and threw them in, big and little. Then we threw in all sorts of rubbish over the whole, plowing and scraping the dirt around the sides of the cellar until the ground was level. To get the ground in order, we planted corn. While planting the corn, I made the remark that it would "probably be of little use to plant any over that old cellar, for there is nothing but lumps of hard clay—not a bit of fine dirt." But just for the fun of it I let some corn rattle down through the hard yellow lumps. I didn't even stop to bring some mellow soil to put over the kernels. They just rattled down into the crevices between the clay, out of sight. The corn came up, and for a while looked yellow and spindling; but by and by the color began to change, and pretty soon it towered away above the rest of the field. The old cellar held water, and the corn-roots got down into the stone-pile and into the water; and even though the ground they stood in seemed to be the poorest kind of hard clay, the corn on that spot where the cellar was, was the finest corn I ever saw. The stalks were like trees, and every one contained two or more mammoth ears.

On our premises we have not the stone needed, without drawing them quite a distance, which, at this season of the year, would be more expensive than to purchase fragments of stone at the stone-quarry. We have just been offered such fragments for \$2.00 a carload; that is, a carload of 20 tons, the quarrymen offering them at this low figure in order to get them out of the way. They also offer a thin kind of slaty stone for covering that may be easily split to any thickness desired, for \$6.00. We shall use this material for fixing our eighth-acre, and the result of this experiment will be reported during the coming season, before this book of mine is complete.

With a suitable one-horse plow, and scraper to match, the excavating may be done almost entirely by horse power, or horse and man power combined. The nature of the soil has something to do in the matter. If the scraper is not at hand, or there is not much to do, loosen the dirt with a plow and throw it out with shovels by hand.

CHAPTER VI.

In the sweat of thy face shalt thou eat bread.—GEN. 3:19.

This book, you know, is to tell you what to do when you are out of work, and also how to be happy in doing it. Now, I think a good many people spoil their chance of happiness by being too ready to give up to bad weather, a slight indisposition, and other like difficulties in the way of making every day count a good day's work. Last night we made all plans for excavating dirt at a rapid rate by the use of a team early this morning. In fact, I asked the hands to be ready, if they could, as soon as it should be light enough to see. We were making an outdoor cellar for fruits and vegetables. Remember, it is now the 5th day of December. Well, in the night I was awakened by the fierce howling of the wind, and was not surprised when I went out before daylight to find the ground partly covered with snow, and a fierce storm of wind and snow from the north-west. Everybody shivered, and told how dreadful the weather was. I ran over my help mentally, and decided which ones would be likely to be willing to go out in the storm. I did not expect any of them before daylight. But I did go out and work half an hour myself with pick and shovel, to see how much the ground was frozen, and to see, also, how disagreeable it might be to work out such a day. I want to explain further, that I have been lately feeling a touch of my old malady; and when it was time to get up in the morning, my joints felt stiff and sore, my throat warned me of the approach of the hard cold that for a year back has been some way hanging about me much of the time, and I had a sort of feeling that may be has oftentimes tempted other people, even before they are fifty, to think, "Well, I am fast getting to be an old man, and it would be nothing strange if my best powers, both of mind and body, were passed by. Probably ten years more and I shall be all gone to pieces, or laid in my grave." Did you ever have such a feeling? What did I do? Get up late, and drag around after I got up, with a kind of long-faced, mournful air and gait? No, sir; I did nothing of the sort. I went and shoveled dirt until I felt perfectly well, had a big appetite, and it was breakfast time. When I got over to breakfast, the baby had the earache, and the oth-

ers were so long in getting up, on account of the cold, I was informed that breakfast would not be ready for fifteen minutes. I went back, and found one or two of the most enterprising of the men, and made arrangements to have the team and plow and scraper start at once. I was told we had no scraper suitable for the work to be done, and borrowing one was suggested. I do hate the very thought of borrowing tools—especially such tools. Our neighbor across the way had just such a scraper as we wanted, but he loaned it to Mr. A., and Mr. A. loaned it to Mr. B., and Mr. B. said Mr. A. took it home; but Mr. A. said Mr. B. took it home, while my neighbor across the way said it had not been brought home at all, although it was loaned months ago.

"No, boys, don't borrow any scraper at all. We will take that old one that we used to fill underdrains with, and try to make it work for to-day."

They felt pretty sure it would all come to pieces; but I told them we would plow the ground up very mellow, and take small loads, and thus avoid not only breaking the scraper, but fretting the horses. It is now half-past nine, and the scraper, in the hands of careful men, is doing splendidly, even though the thermometer is only 19 above zero, with the wind blowing almost a gale. The dirt moves beautifully, and the hands, after being once warmed up to their work, don't find it disagreeable. When I went to put on my stockings in the morning, I found one of them wet, on account of a hole in my boot, and that accounted for the bad feeling in my throat, and rheumatic twinges in my joints. I put on some dry stockings, a pair of overshoes, an old overcoat, and a pair of woolen mittens that my good mother knit for me last winter, and I enjoyed working in the dirt so much that I feel like laughing at my feelings of the morning. I have not only all my natural energy, but I feel stronger this morning than I did when I was twenty-five or thirty years old; that is, I feel more like shoveling dirt and holding a scraper now than I did then. More than all the rest, my heart is full of thanks toward God that I am permitted to work outdoors when I know my health is suffering from too little

just such exercise in the open air. I am not only full of love toward God, but of love and charity toward my fellow-men.

Do you want to know the moral of this chapter? It is this: If you want to be happy in doing the work that lies before you, get up bright and early, even if it is stormy. Clothe yourself warmly and *wisely*; then go out into the storm, and do whatever has to be done until your whole physical body glows with the effects of exercise in the cold wintry air. Then shall you find despondent and dismal feelings gone; and if your experience is like mine, you will find your aches and pains are gone too. Work in the dirt, even if the dirt is freezing. It is cheaper than doctors' prescriptions, and more wholesome and profitable every way. If the work to be done is something that your heart is in, you will soon be full of enthusiasm, for you will be in your natural and normal state. Now, then, don't say you can't get ready for the gardening operations of next year because the weather is too bad. If you have already something on hand more profitable than the work I have suggested, then you do not particularly need this chapter.

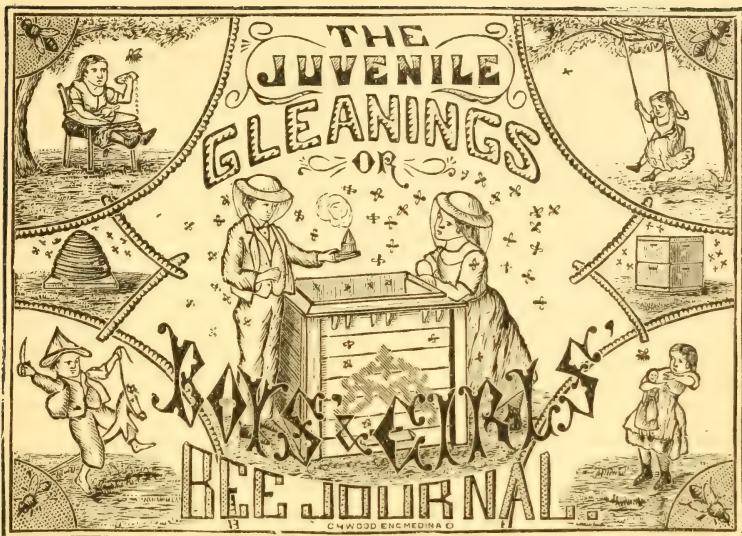
It is now four o'clock. As the storm continued unabated, when the noon hour approached it seemed even more important that our excavating for the time be finished to-day. I knew it was rather unpleasant to work out of doors; and so at the noon service I mentioned the reason why I was anxious to have the work done, and suggested that if any of the men employed in other departments of the factory would like to take a couple of hours digging the dirt, I should be quite glad of their services. Before half-past twelve, one came forward saying that he would work in the dirt if I wanted him to, and then another and another, until we had all the help wanted; and by the time I got back from the Saturday afternoon prayer-meeting, the work was safe from the weather, and a roof of boards placed over it.

Just at this time it was suggested that some apples in an out-building were in danger of being frozen. By the way, before I get through with these talks, I expect to have a chapter on apples. Well, one of the men handed me an apple, telling me it was frosted on the surface a little already. It

was a Peck's Pleasant; and if I had been governed by my feelings at the time I tasted of that apple, and I had been appointed to decide which was the best apple in the world, I should have unhesitatingly said, "Peck's Pleasant, by all means." Why, the flavor of that apple was most exquisite. I do not know that I ever tasted of any thing in my life — apple or any thing else — so *wonderfully* refreshing and delicious. Do you know why? Bless your heart, I had been working in the dirt, in the frosty air, until I was full of animal spirits, and just a little thirsty — just where I could appreciate to the fullest extent a nice apple. It was just frosty enough to make the juice cool and refreshing. Ice-cream and ice-cold lemonade are nowhere. Do you see the point? One who sits in the office all day, reading agricultural papers and letters from the farmers, can no more enjoy to the full a good apple than any thing in the world. Perhaps everybody is not like myself; but God made me to stay outdoors — at least a great part of my time. There is a short verse in the first chapter of Isaiah that reads this way: "If ye be willing and obedient, ye shall eat the good of the land."

At another time, when I had been at work out in the frosty air, one of the men was pouring some California honey into a can. It was so cold that it did not run well; but it was beautifully transparent for all that, and I thought I would just sample it. The honey was like the apple. It seemed to me that everybody ought to go into ecstasies over the exquisitely beautiful flavor of this mountain-sage honey. Why, if it would not have been undignified, and out of place, I should have thought it the proper thing to swing my hat and thank God for such a beautiful gift to man. I think this kind of honey was some that my friend R. Wilkin, of San Buenaventura, Cal., sent me; but as it had been standing in that can a year or more, I had never thought before about its being particularly nice. It was not the apple, nor was it the honey. It was just *myself*, because I had been out of doors, pushing ahead with mind and muscle in exploring God's gifts. My friend, do you think it a hardship because God has said, "In the sweat of thy face shalt thou eat bread"? I do not. I thank him for the privilege.

To be continued Jan. 15, 1885.



He that is faithful in that which is least, is faithful also in much.—LUKE 16. 10.

MYSELF AND MY NEIGHBORS.

EXCELLENCE OR CHEAPNESS—WHICH?

Through wisdom is a house builded.—PROV. 24: 23.

WELL, little friends, the convention of bee-keepers of North America have appointed your humble servant to give them a talk about excellence or cheapness; and as the talk I propose is to be a sort of neighborly chat, I thought I would just put it in here for you to read.

I do not know but that this subject was given me because some of the brethren think I have been a little too eager to recommend cheap tools and appliances; and may be they thought I would defend my side of the subject while somebody else would take up excellence rather than cheapness. Now, it seems to me that wisdom and experience should guide us in this matter, and that we can not very well lay down *general* rules for purchasing bee-supplies, or for *purchasing* any thing else, in fact. Isaiah tells us, in his first chapter, to "learn to do well;" that is, doing well is progressive; and I should also say, learn to purchase wisely. If you have got a little money that you want to invest in bee-supplies, don't be in a hurry to get rid of it all. Our text says, "Through wisdom is a house builded;" and I should say, through wisdom we make prudent purchases.

Suppose a boy gets big enough to need a knife. What kind of a knife should he purchase—a five-cent knife or a two-dollar knife? Why, I should say it depends upon who the boy is, his age, and what he wants

to do with the knife. But with the average boy, I think it would be a pretty good idea to try the cheap knife first. Even if he has laid up a couple of dollars to buy a pocket-knife, I think he will get more satisfaction by trying a cheap one first than by trying the two-dollar one first. If the cheap one does not please him, nor answer his requirements, it would not be very much expense to give it to some other boy, and try a little better one. Let him carefully *examine* and test each knife he buys, until he becomes a tolerably good judge of knives, and is able to purchase understandingly.

There are a great many people, and good people too, who have a way of saying, in regard to every purchase that comes up, "The best is the cheapest." A good deal depends upon what you mean by *best*. Suppose you want a hammer. There are hammers in the market, for only five cents. They are not loose nor rickety either, for they are made all of one piece of iron; and although they may be awkward and cheap-looking, they will do a vast amount of service for many kinds of work. They cost so little that if somebody borrows one, or loses it, it does not matter much; and I have found it quite convenient to have these cheap hammers scattered all around the premises. We have one down in the barn, and one in the stable out in the lots. The children have them to crack nuts; and, in fact, there are so many of them on the premises that whenever you want some sort of hammer for just a minute, you can almost always get hold of one of these, without going a great way or hunt-

ing very long. But, do you think I would give a good mechanic such a hammer to put up hives with? By no means. In putting up hives he uses a hammer almost constantly; and if I could find a hammer *worth* five dollars, I would give it to him without hesitation; for if it were worth only *a cent a day* to him more than a cheap hammer, it would soon pay for itself. For this same reason a good mechanic ought to have at least three hammers, and *three good ones*. Now, when I say I would give a hammer worth five dollars if I could find it, I do not mean that I would buy one that is silver-plated, or has inlaid work in the handle, and things of that sort; neither would I give him a hammer that had a great amount of unimportant work put on it. One of our large railroad companies paid \$60.00 (I think it was), for a dozen hammers to be used by some of their expensive men. These hammers were all worked out by hand, and were very handsomely made. I do not believe it will pay many bee-keepers to use tools or appliances made in this way. When he gets to be so well off in raising honey and bees that he has some money he really does not know what to do with (I wonder if there are any such here to-day, friends), it may be just the thing for him to do, to buy a six-dollar hammer to make hives with, because, you know, "the best is always the cheapest."

Suppose somebody of limited means wants to try bee-keeping. What kind of a colony of bees should he buy? Without knowing anything about the general habits of the man or woman, I would say, let them get the cheapest colony of bees that could be found in the neighborhood, thus saving expensive transportation charges, and also making their purchases of friends and neighbors. Then I would advise getting an Italian queen; but as I have said before, if one is new at the business, and may be, likely to make blunders at first, I would tell him to get an untested queen. After he introduces her all right, and gets her to laying, if she does not turn out well in every way, let him try a higher-priced one next time, working progressively; and my experience convinces me that the best way in the world to get any thing of this kind is to get it *progressively*. *Learn* to do well, not undertake to come up to the highest standard all of a sudden. There is far more enjoyment in making a little more improvement every day, than in stepping into great things, even if it could be done. The same with hives. I would first get a cheap hive—say a Simplicity. When winter comes, get a hive suitable for winter, even if it does cost a little more; but save your old Simplicity for your increase when spring comes again.

If you are going to make hives, start out with few tools, and purchase judiciously each new season, as you find you really need to. Do not get any thing to be put away on the shelves until you may need it. Purchase what you need, and no more, until you have pretty surely demonstrated it would be prudence to purchase larger lots for the sake of getting better prices. If you have worked with comb foundation enough to know that you want to use it largely, you can, from

past experience, usually figure out how many colonies you will need to have, to think of buying a foundation-machine.

There is another point to be considered right here. Sometimes cheap tools and cheap machinery make us so much bother and worry that they spoil all the pleasure of trying to keep bees; whereas a high-priced tool or a high-priced machine would go right along, without any hitch or accident, in such a way that the work would be only pastime or "fun," as the boys say. Where one's time is valuable, or where he already has many cares and responsibilities, nice tools or nice machinery all in perfect working order is by all means the most satisfactory, and, I believe, the most profitable. This latter point comes in more with tools or machinery that is necessarily somewhat complicated. We had some experience in this line in making and sending out rubber plates for making foundation. While *we* made the machines work nicely here in the factory, and while a few of our customers were pleased with them, the majority found there were so many conditions to be observed, and the whole arrangement was so uncertain in its results, that I have always regretted that I advised any thing of the sort. The same remarks will apply with force to home-made honey-extractors. We have for years sold the inside work, so that the friends who wanted to economize could save something by attaching it to an ordinary tin can or barrel; but as a rule, I believe they found it more vexation of spirit, and perhaps more expense in the end, than to have purchased an extractor all ready for use. Where one has a great many bees, and a good market for extracted honey, perhaps friend Stanley's automatic extractor will be found to be cheaper than any other.

In regard to bee-feeders, my experience has been in favor of something very plain and simple. One of our bee-friends once made a remark in jest in one of the journals, that every bee-feeder and bee-hive, according to *his* notion, ought to have "cog-wheels," slides, and levers, somewhere about them. Now, "cog-wheels" work very nicely in a warm room on a winter's day; but when you get out in the apiary, among the bees, about harvest time, when every thing is crowding, the said *cog-wheels* seem to be somehow out of place. Let us have our implements plain, simple, and substantial; let us pay enough for them to have every thing exactly as it should be—hives and frames interchangeable—every thing so it will work easily and surely; no sticking nor jamming nor pounding to get things in place.

In regard to utensils for honey, I believe the demand seems to be in favor of cheapness—tin pails that are to be given away, as well as crates to hold our comb honey. Sell the honey for so much, *package and all*. But even though we give them away, let us have them well enough made to be sure there will be no leaking nor daubing.

In regard to honey-knives, I would advise, as I advised the boy with his first pocket-knife. If you have few bees, and don't expect to go into the business largely, you can

make a 10-cent garden-trowel do your uncapping very well for quite a while. When you need a better uncapping-knife, get it.

In regard to perforated zinc, and things of this sort, don't include any in your first purchase. Wait until you feel the need of such new implements. May be you will never need them at all.

Even though I advise economy in purchases, I would have every thing that stands out in the weather painted. If you say you can not afford it, I would have half the number of hives, and have them protected from the weather by paint, rather than increase so fast, and have the weather constantly spoiling my implements. Besides, I would pay *something* for the sake of having things look decent and in order. A great many times, nice-looking implements encourage us to renewed energy; and sometimes just a little extra energy makes all the difference between success and failure, or profit and loss.

Every man who has honey to sell ought to have some sort of scales to weigh it on. The family steelyards will do to start with; but whenever you begin to take time enough in the course of a year, in using steelyards, to pay for a pair of scales, get the scales, but don't get them sooner, if you are cramped for means. When your business increases so that it will pay to have still better scales, get them. Don't waste the price of a good article in bothering with a poor cheap one.

In regard to seeds for honey-plants, go slow, unless, indeed, you are a farmer, and can raise alike, buckwheat, rape, or raspberries, so as to make it a paying investment aside from the honey. If you can do that, by all means raise honey-plants. I am led to make these remarks, because some of the new friends seem to think the first thing to be done in starting in bee culture is to get a pound of figwort seed, and four or five pounds of the spider plant, just because these plants yield honey in such quantities as to be visible to the naked eye. Buy a five-cent package of these seeds first; and if they please you, plant more the next year, by which time you should have seed of your own raising.

In regard to sections for comb honey, as the appearance of this product has a great deal to do with the price obtained, I think it very likely that the *best* is the *cheapest* every time.

When you find you need a smoker (and you may need it the first day you can call yourself the owner of a small colony of bees). I should say, try a cheap one to start with. But perhaps you can decide what you want before you buy by examining them at conventions, or testing those used by your neighbors. I say this, taking it for granted that bee-keepers are always *neighborly*. Is it not so, friends?

In looking to living-boxes, I have sometimes thought I would about as soon have a half-bushel or peck basket fixed to a pole, as to have any of those in the market. Maybe, after having tried them, though, you will think differently.

When your business arrives to the dignity of requiring a steam-engine, it will pay you to look into the matter very carefully. If

you can, go and see the engines made near you. But as I said before, be sure you need one before you get it. If you are doing your own work, decide how cheaply you can afford to furnish power by treading a foot-power machine. Whenever an engine would save you \$25.00 a year for power, if you can raise the money to buy it, without cramping yourself, buy one of one or two horse power. When you need a larger one, you can, as a general thing, dispose of the smaller one, or turn it toward another one as part payment.

While some folks get along nicely without any veil at all, others save time and save their nerves, by using veils. The same may be said in regard to gloves, although for myself I should certainly never use the latter among bees; and if I had the *entire* management of an apiary, I do not think I should ever need a veil. Cheap home-made veils will answer a very good purpose; but there are no gloves that will do, except the regular rubber gloves made for the purpose.

Prudence and economy would dictate some sort of wax-extractor. But don't buy one until you have discovered you need one. If you commence on a small scale, as you by all means should do, I would get a cheap one first.

TAKING CARE OF THE TOOLS YOU DO GET.

Now I am going to talk a little on the above, even if the subject has not been assigned me. A cheap, low-priced tool may be so well *cared for* that it will always give excellent results; whereas, the most expensive tool may be so *badly used* that it will very soon give *poor results*. Have for your tools regularly assigned places. Where any tool is wanted in different places, I would have duplicates. For instance, cheap brushes for brushing off bees should be in handy places in the honey-house, and in several places about the apiary, at least during the summer time. The same may be said of hammers. Do not leave any kind of tool out in the rain. Keep every kind of tool not only well oiled on the moving parts, but oil it to prevent rust. Oil the hinges to the door of your honey-house. Rub tallow on the windows so they will slide easily up and down. Keep your lawn-mower nicely oiled, and out of the rain. Have your brooms hung up in broom-holders so the ends will not get rolled up and made useless; and keep the brooms out of the rain also. If you use a wrench, keep it nicely oiled and in place. And this matter of oil is of so much importance that I would have cheap oil-cans filled with oil, on nice little bracket shelves in the barn and in the stables. A little box should also be there, filled with tallow, where it can be had in a moment. A great many times the oil-can or the tallow will enable you to use a hand-saw so as to do the work in half the time it would if you had not used it. With steam-engines, and machinery for hive-making, oil is a necessity; and those who neglect to have it handy will sooner or later have to pay heavy bills for repairs that a few drops of oil might have saved. Nails and screws of different sizes should also be kept where you can put your hand on them quickly. Whether you are a bee-keeper or not, you need screw-

drivers and adjustable wrenches, where any of the children can get them in an instant, if you tell them the tools are wanted in a hurry. And, my friend, as you value the future happiness and comfort of those children, teach them to be sure these things are put back in their places as soon as you are done using them, if you should forget it yourself. A girl five years old can easily save the time of a man and a team, may be, by knowing where to find a wrench or an oil-can; and the little girl will get it, and put it back, quicker than a big man could. That is one reason why I like little girls, and little boys too, because they can help such a "big lot," when they get into the way of helping, and when their papas make friends with them. I wonder how many of the papas to whom I am talking to-day are in the habit of making friends with the little chicks at home. Why, if you don't you lose half the pleasure of success in business. When a big crop of honey comes, and the prospect is before you of being able to pay off debts that have worried you, what a rare pleasure it is to be able to tell the children about it when you tell mamma, and have them rejoice and clap their hands too!

There, friends, I thought I was going to make a very short talk this time; but somehow, when I got a going it "talked itself." Good-by.

MRS. HARRISON TALKS TO THE JUVENILES ABOUT PETS.

WHAT SHALL BE THE CHARACTER OF THEIR LETTERS?

MY DEAR JUVENILES:—I take a great deal of comfort reading your little letters, where one says she has a kitty, and another a bossy. Some older persons may think your letters of little account, but I do not. I feel quite frisky, although I have lived in Illinois half a century, and in Ohio awhile—I shall not tell you how long, though.

I am not too old to go to Sunday-school. I was there last Sunday, and two strangers were there, and wanted us to form a "Humane Society;" that is, a society whose members promise to be kind to everybody, and to the horse, cow, dog, or cat; oh, yes! to the elephant, lion, tiger, mud-turtle, and every thing that lives—even to little boys who throw stones at our windows, and steal our grapes.

My dear children, your pets do you a great deal more good than you are aware of. Some persons who belong to the Humane Society visited the penitentiary—not one, but a whole lot of them, and asked the prisoners who of them had pets when they were little children at home. Would you have believed it? not one ever had any—not even a cat to purr around and rub against his legs, or a pet toad to live under the doorstep. Don't you pity these poor fellows who had nothing of their own to love, and so their hearts grew hard and wicked? I am almost afraid to join the Humane Society, for at their meetings they ask the members who have hurt any thing since the last meeting, to raise their hand. I am afraid I should have to stand up and say, "A bee stung me, and I hit it and killed it." And when the president asks me what made the bee sting me, I should have to tell

"the truth, the whole truth, and nothing but the truth," and it would be this: I went to their hive, jerked off the roof, jarred and banged around, scaring the poor bees out of their wits, who thought their home was about to be torn down over their heads, their babies killed, and their honey all eaten up.

Are the bees to blame, when they try to drive me off, and shoot at me with their tiny guns? Our country's laws protect us in our own homes, giving us leave to shoot or drive off persons breaking open the doors to steal from us; and should not the bees have some rights too? If a person knocks gently at our door, we open it, politely speak, ask him to come in and "take a chair." If I treat my bees as politely, do you think they would sting me? or if I ask their permission, by gently tapping at their door, and am not boisterous or rude, and have no irritating odors about my clothing, from bee-poison? I have tried to be kind to my bees in a general way. I have fed and watered them, and made warm bed-clothes for them; but I am going to try to be kinder still—treat them more politely, wouldn't you?

My bees go to a public well near by, and sip the fresh water from the gravel; they are attending strictly to their own business, and do not sting; yet boys who gather there kill all they can. Where there are new houses building, and they have beds of mortar, bees sip from it, and boys with little paddies spat every one they can, down into the mortar. Is this being humane?

Peoria, Ill.

MRS. L. HARRISON.

Well, now, really, Mrs. Harrison, I did not intend that our little friends should not tell about their pets, and confine themselves to bees, instead. My purpose was to avoid a little sameness in their letters, and at the same time give them something useful to do. Perhaps I put it a little too strongly, and gave a wrong impression. If I did, I heartily beg their pardon, and thank you for your seemingly indirect, but kind criticism. You notice that the juveniles still mention their pets in their letters as before, but yet I think they should not be inserted unless of some interest. We have more letters than we have room for, and we think that only the best should go into print. It seems hard, I know, to show partiality to our little friends.

A society like that you mention has only recently been formed here in Medina for the suppression of cruelty to children and animals. Father and myself are members. Each member is expected to report promptly any act of negligence or cruelty, to the marshal.

I agree exactly with what you say about pets for children. There is something so innocent about these little dumb creatures about us that God surely intended by them to teach his little folks lessons of love and purity. The younger members of our family take great comfort with those baby-rabbits that Caddie told you of. When I was quite small I used to spend hours with my rabbits and doves; and when perchance one of my pets was killed, I would sit down and have a big cry over it. I don't think it hurt me either. By all means, let the boys and girls have their pets. Such harmless amusements will tend to keep them from associating with bad company, and make them love all God's creatures. ERNEST.



Every boy or girl, under 15 years of age, who writes a letter for this department, CONTAINING SOME VALUABLE FACT, NOT GENERALLY KNOWN, ON BEES OR OTHER MATTERS, will receive one of David Cook's excellent five-cent Sunday-school books. Many of these books contain the same matter that you find in Sunday-school books costing from \$1.00 to \$1.50. If you have had one or more books, give us the names that we may not send the same twice. We have now in stock six different books, as follows; viz.: *Sheep Off, The Giant-Killer, The Roby Family, Rescued from Egypt, and Ten Nights in a Bar-Room.* We have also *Our Homes, Part I, and Our Homes, Part II.* Besides the above books, you may have a photograph of our old house apiary, taken a great many years ago. In it is a picture of myself, Blue Eyes, and Caddy, and a glimpse of Ernest. We have also some pretty little colored pictures of birds, fruits, flowers, etc., suitable for framing. You can have your choice of any one of the above pictures or books for every letter that gives us some valuable piece of information.

"A chiel's amang ye takin' notes;
An' faith, he'll prent it."

YOU are taking hold nicely in the problem which I gave a short time ago. So far we feel tolerably certain that a bee dies after having stung, and that, too, a few hours afterward; but let us have more reports until we are absolutely certain. While these things are important, little folks, there is something else that I wish to call your attention to.

Did you ever see a bee that acted as though he were real mad, and while buzzing before your face fairly boil with rage until you think that he has almost a human temper? I wonder if a bee ever tries real hard to control himself. I presume not; for how could he know any better? We have an old horse, Jack, by name, that will lop his ears flat upon his head, and his eyes seem to be ablaze with evil spite. There is one particular thing that he doesn't like to do; and this is, to back. He can't see the need of it, and will, if he can, smash something by one big lunge backward. I wonder if he tries to control himself.

Little boys and girls act very much like those dumb creatures. They have their good days and bad days; they have things they don't like to do; they have their spells of being cross at every thing. Sometimes, when Huber is a little naughty, we ask him if he is a good boy. "No, bad boy," he will say, while his face, with a dignified expression, shows that he meant what he said. I wonder how many little boys have just a little of the fire that a bee has. The little bee probably does not *know* that he is doing wrong; but God loves his little children vastly more than he does the bee or the horse, and he has made the little boys and girls to *know* when they are good or bad.

Now, little friends, see if you can't please God and help your mother by trying real hard. Some time you will find it not so easy

when you get old, if you don't begin now. When you are asked to do something that is disagreeable, not only do it, but see what a pleasant face you can have while doing it. If the bee or the horse doesn't know it is right to control himself, you do. ERNEST.

150 SWARMS KILLED BY BLACK HONEY; MEXICAN PONIES.

My papa takes cousin Caddie and me down to the River farm, where he keeps bees, when it is warm and pleasant, and gives us lots of honey. This year it was real nice; but last year it was black, and we did not like it. Papa said the bees gathered it from the leaves of the trees, and it killed 150 swarms for him last winter. On the same farm we have a pony, and it has a little flesh-colored colt with pink eyes. Papa thinks it's a daisy, and perhaps I am going to ride it some day. MABEL HARRINGTON, age 7.

Medina, O., Dec. 1, 1885.

I will explain that Mabel is Neighbor H.'s daughter, and she is also a playmate and cousin of Caddie. They are nearly of a size and age. As I was going up the street yesterday I saw them a little ahead of me, and I declare I could not tell "which from t'other."—Yes, that colt of cream color and pink eyes is a real beauty, and is what bee-keepers would call an albino. His mother is a mustang, and was caught right off the plains. Neighbor H. used to let me ride her around horseback.

I remember once that she took fright at something, and made a bee-line through the apiary whilst I, clinging to her back, began to see visions of broken hives, stinging bees, and myself bleeding and mangled upon the ground; but the reality never came; and by some strangely unaccountable way I could be seen a moment after on her back, up the road. As a moral, I would advise inexperienced horsemen to be careful with Mexican ponies around the apiary. ERNEST.

PUTTING HONEY AMONG THE BEES, WHEN THERE IS NONE COMING IN.

Pa has one hive of nice Italian bees. I think they are very pretty. We put some honey around the bees, but they were not working much that day. When we put the honey out there you could see the Italian bees begin to come first. VICTOR COX.

Chocowinity, N. C.

Placing honey among the bees after the honey-flow, is a little risky. It would very likely start robbing, then you would have no end of trouble. So you think the Italians will more quickly scent the sweet, than the black bees, do you? ERNEST.

WHO ARE CADDIE AND ERNEST?

Please may I ask who Caddie and Ernest are? I don't believe I ever heard who they are. My father has but one stand of bees. They are Italians, but he is going to get some more. My brother has some very nice chickens, and he is going to raise more next summer. I got a letter from Nellie Rosister. CLARA MADSON.

West Branch, Ia., Nov. 13, 1885.

Why, of course you shall know; but I kind o' hate to talk about myself, because it would hardly be the proper thing. However, I will say that Ernest and Caddie are a brother and sister of Huber. Huber, you

know, is an "off-sprig" from the old "Root." Perhaps I should say further, that I have been away to school for the last four years, and in consequence you have not heard from me much during the time. Caddie is a blue eyes, next older than Huber.

ERNEST.

DO GRASSHOPPERS EXTRACT THE SWEETS FROM THE FLOWERS?

This is my first letter to GLEANINGS. Ma has 64 colonies of bees, and sister Maud has three stands. We did not get very much honey this year. Ma thinks it is because there were so many grasshoppers. She thinks they sucked all the sweets out of flowers. They nearly destroyed some meadows, and some fields of corn had hardly a silk left on the ears.

HAMILTON DUNCAN.

Limeville, Iowa, Nov. 9, 1885.

FROM 145 TO 215, AND 7000 LBS. OF HONEY.

We have 215 hives of bees. My brother does nothing but attend to them. I help to make cushions of wool to keep them warm in winter. My brother thinks that is the best way to protect them. I also help to clean sections and crate them. We did not lose many bees last winter. Our bees did not do as well this summer as other years. We got only about 7000 lbs. from 145 stocks, and increased to 215. My pa takes all the bee-papers, but I read only GLEANINGS.

NELLIE CORNEIL, age 13.

Lindsay, Ont., Can.

BRINGING A SWARM DOWN BY WATER.

Friend Ernest:—Seeing you have charge of the Juvenile Department, I will try writing once more. Pa had six colonies of bees in the spring, and increased to 15. We extracted 242 lbs. of honey. We did not get any comb honey. Pa has his bees packed in chaff hives. Last summer our bees swarmed and were going away. I saw them, and told pa. We ran after them with water, and brought them down by throwing water on them. They alighted on a cornstalk in the middle of the cornfield.

CORA BURTON, age 13.

Goodwine, Ills., Nov. 23, 1885.

AN INTELLIGENT CAT.

I do not think there is any thing about bees that I could tell you, that you do not know already; but I am much interested in the children's letters in GLEANINGS. We have your picture in the A B C book, so that I feel quite acquainted with you. My mother has six stands of beautiful bees; they are packed with chaff cushions at the sides and on top, and we hope they will winter well. We have a white cat that is intelligent and musical. Whenever the parlor door is open he jumps up on the piano-stool and plays first with one paw, then steps on the keys, up and down the keyboard. His eyes fairly laugh with the fun. When mamma plays, he goes up on the top of the piano, and sits looking in her face, and purrs as loud as he can.

I think you are very kind to print the letters from the children. I am going to try to get you some new subscribers. FRANK BREWSTER, age 10.

Pequannock, N. J., Nov. 23, 1885.

CATCHING A 2-LB. PICKEREL.

I have been so interested in your accounts of your carp-pond that I think I will tell you about our fish-pond. It is situated about one hundred feet from the Pequannock River, and there is a brook of nice clean water running from the pond to

the river, all the year round. A few weeks since I went down there early in the morning and saw a large pickerel going slowly up the brook from the river to the pond. The water was so shallow that its back was out of the water. I caught it in my hands. It fought well and escaped twice, but finally I brought it home. It weighed over two pounds.

There are pike, pickerel, sunfish, suckers, black bass, and white fish in the river, but only a few go up to the pond. I get quite a string of fish sometimes, by using a hook and line. Nets are not allowed in the river. There is a fine of \$25.00 for putting a net in the river.

BERT R. BREWSTER, age 11.

Pequannock, N. J., Nov. 23, 1885.

POLLEN AND ITS CHARACTERISTIC COLOR, AS GIVEN BY THE VARIOUS FLOWERS.

I will tell what I think I know about pollen. On corn and ragweed it is light green; buckeye, very dark red; red clover, dark green; basswood, yellow; maple, red; hollyhock, white; elm, light yellow; thistle, light yellow; pumpkin, yellow, almost white; locust, light yellow; goldenrod, dark yellow. I got the scissors and Bible that I sent for, and I was very much pleased with them.

Woodstock, O. NETTIE H. CRANSTON, age 11.

Friend Nettie, your letter deserves a chromo too. I wonder how many of the big bee-men can tell the source of the pollen, from its color. I think it would puzzle a good many to do as well as you have done.

ERNEST.

ANOTHER RUNAWAY, IN WHICH FIVE HIVES ARE KNOCKED OVER.

My papa is a bee-man. He began two years ago, with ten swarms. He has 31 swarms now, and got about 1500 lbs. of honey. Nov. 8th there was a runaway which went through his apiary and knocked down five hives. The combs of four of them were mashed nearly all to pieces.

Last summer I watched the bees while papa was at work in the garden. Once when the bees were swarming I held the hiving-box, covered with bees, for him. I have a friend, Cora, with whom I go to school, and play.

ETHEL F. WILCOX.

Northfield, Minn., Nov. 18, 1885.

Why, friend Ethel, your experience of a runaway horse through the apiary was quite similar to the one we had. You say the combs of four of the hives were "mashed nearly all to pieces." From this I infer that you do not have your combs wired, as we do in our apiary. During the recent mishap of which I told you on page 765, scarcely a comb was broken. We should be glad of more facts as to how the bees behaved, and the cause of the accident. Friend Miller, page 811, tells us how to quiet horses that have been stung. We should be glad of more reports of this kind.

ERNEST.

A SAD STORY; JUST REWARD FOR STEALING BEES.

I have a sad story to tell you. Two young men stole a good stand of bees from pa one night, 2½ years ago, but we did not find it out then. One of the same boys and two other ones broke into a store this summer, and took a lot of goods. Two of them were sent to prison a few days ago, and one of them got away from the jailor. They may get him yet. They all live in this little town, and have mothers living, who cried about them; but the men took them any way. Pa and I went by the jail. I saw

the big iron bars. It looks as if it were built to keep wild beasts in. I want to be a good boy, and not get drunk and steal, and grieve ma's life, as those boys did theirs. I have one stand of bees, and got 126 lbs. of extracted honey from it. Pa had 11 in the spring; has 70 now. I have a big pig.

Georgetown, Ill. SAMMY LINDLEY.

SUDDEN DEATH OF A COLONY FROM FEEDING.

One of our neighbors fed dark syrup to a stand of bees at 11 o'clock, and at 12 they were all dead.

Ferndale, Cal. GEORGIE SPAULDING, age 9.

HONEY NOT FIT TO EAT.

One of our neighbors had a lot of bees, and they made beautiful white clear honey; but when they took out the honey they could not eat it. It was made of laurel and wormwood and fennel.

Ferndale, Cal. MAGGIE SPAULDING, age 11.

A KIND WORD FOR GLEANINGS.

I will write to you, and tell you something about our bees. We have about 200 hives of bees. We got about 8000 or 9000 lbs. of honey this year. Papa takes GLEANINGS, and he says he couldn't get along without it.

ADA MCPHAIL,
Gallinas, Texas.

THE LOSS OF TWO COLONIES.

Pa put two colonies of bees in the cellar in the fall, and they were looking well until lately he looked at them and found them all dead. They had plenty to eat, but it was too wet for them. It wouldn't be such a loss if there were any more bees near here. These two colonies cost at least \$25.00. If any of the readers of GLEANINGS are dealers in fruit-tree seeds, please send price list of seeds, especially Russian mulberry, grapes, plums, and crab-apples.

The bee, the bee, the busy bee,
Gathers honey off flower and tree.
He toils and toils the livelong day,
But never has he a word to say.
When the sun is far in the west,
Not the bee doth stop to rest.
Never doth he taste of rum,
Nor does he get drunk, as some.

Ellensburg, W. T. J. D. SEATON.

WHAT BEES DO WHEN THEY GET DOWN LITTLE BOYS' BACKS.

I have got my ma to write for me, for I can't write, but I like bees. I like to watch them gather honey, and to see them go in the hive with their legs loaded with pollen. My pa's bees came out one day this winter, and I was out to see them, and there were two got down my back and stung me. I have been through my First Reader once, and going through it again. I have one pet, and that is a cat.

Cameron, Pa. EARNEST WYKOFF.

"THROWING GROUND" TO BRING DOWN A SWARM; HOW A JUVENILE MANAGED.

In 1883 pa and I went in the lot to cultivate potatoes. We then saw a swarm of bees flying over us. We ran after them till we got past them. We threw ground amongst them till they clustered on a little bush. Pa told me to watch them while he went home to get a hive; and while he was gone the bush got heavy and bent down, and the bees dropped off. They commenced to fly. I was afraid they were going off, so I covered them with my hat; and they all clustered in it. When pa came he just shook them in the hive, and then we left it there till night. Then pa and brother John went and got them.

Indian River, N. Y.

MICHAEL ZEHR, age 14.

KING-BIRDS KILLING BEES; CATCHING BUMBLE-BEES.

My father had 18 swarms of bees last fall. Two of them died this winter. One of them had no queen. The king-birds would come and eat the bees last summer, but George and I would shoot them when we got a chance. Sometimes they will stay up on the tall trees, but sometimes they will come down. George, my younger brother, used to catch bumble-bees and shut them up in a hive, but they would not stay. There are lots of wild ducks that come in the pond, and we boys stone them.

Cameron, Pa. WILLIE WYKOFF, age 13.

CUT STRAW AND SAWDUST FOR PACKING; HOW TO TELL RIGHT SIDE UP OF SECTIONS.

Papa has 120 swarms of bees, packed with cut straw and sawdust, on their summer stands. He got about 5000 lbs. of comb honey and a good deal of extracted that we did not weigh. You can always tell which is the right side up of a section of honey; for unless the sections are turned over on the hive, the bees always leave the largest holes in the lower corners.

LUCY HURLBUT, age 9.
West Bethany, N. Y.

A SELF-MADE MARTYR; A BEE LIVED JUST FOUR HOURS AND A HALF AFTER HAVING STUNG.

Seeing that you had proposed to the juveniles the plan of removing the sting from a bee, to see how long he would live without a sting, I was so much pleased with the idea that I at once tried it. I went out into the apiary, and attempted to catch a bee; but just before I could capture one, a little fellow that had been buzzing unpleasantly near my ear concluded to be accommodating and save me the trouble of catching one of his companions; so he flew at me with an angry "whiz," and popped his sting into my hand. Of course, his fate was sealed, so I caught him and put him into a queen-cage, and then put the cage on top of the combs in the hive. Before putting the cage in the hive, I put a few drops of honey in it. I put the bee in at half-past eleven o'clock A. M. and he lived until four o'clock P. M., so you see the poor little fellow lived only four hours and a half. I hope some of the other juveniles will try the experiment.

Our bees have done exceedingly well this year. Papa ordered a lot of iron-jacket cans, to put his honey in. He received them the other day. He gets all of his apiarian supplies from you.

FLORENCE BOLES.

Church Hill, Miss., Nov. 17, 1885.

Well done, little friend. I am going to tell our mailing clerk to send you a large and beautiful chromo, which will be in addition to the book already sent you.—So you really are a self-made martyr to the cause of science. I wonder if that little bee, when he stung you, knew he was going to die; if he did, don't you think he was a martyr also to his dear little home? Or do you think he was just like little folks sometimes are, when they feel a little mad and want to give somebody a "dab"?—Your bee lived four hours and a half. Hulda Myers' (page 791) lived seven hours. Now let us have quite a number of reports upon this point, until we shall have this matter settled. To every juvenile who gives an answer to the problems I gave in Oct. 15, page 711, we will send a nice present.

ERNEST.

30 SWARMS AND 1200 LBS. OF HONEY.

My pa has 30 hives of bees, and he got 1200 lbs. of honey, and thinks he could have got 2000 lbs. if he had had time to take it. Pa thinks rape is nice for bees in the fall, as it blossoms, and bees work on it, until snow comes. Pa once buried a swarm of bees like potatoes, with straw six inches thick all around them, and some dirt over, and the snow drifted over them two feet deep, and in four months he took them out and they were flying all around him before he could get them out.

BESSIE GREEN, age 8.

Montague, Mich., Nov. 30, 1885.

A LITTLE BROTHER WHO CALLS HIMSELF A. I. ROOT.

My papa has 11 stands of bees; he keeps them in the front yard. I like to help him. Mamma has one stand of bees. My little brother calls himself A. I. Root. When he gets stung it knocks out some of his self-conceit. I am going to school. I have one pet pig.

—, age 9.

Concordia, Ky.

Give my respects to my little namesake, my little friend; but, what do you call *yourself*? I am glad that your brother thinks enough of me to wish to be named after me.

A LETTER FROM A LITTLE GIRL IN ENGLAND: PHENOL FOR CURING FOUL BROOD.

I have been thinking of writing to you for a long time, and now intend doing so. I need not tell you that father keeps bees. I suppose you know he does. He can not understand how it is you do not say anything about the new cure for foul brood. It is called phenol. He has sold a lot, and customers say it soon cures the complaint. He sent some to Mr. Robert Lees, Lucknow, Ontario, whose bees were very bad with the disease. Perhaps you can find out whether he did any good with it. Have you seen Mr. Cheshire's new book? Father says he will post it monthly for you, if you like.

JESSIE HOLLANDS, age 11.

The Apiary, Waddon, Croydon, Surrey, Eng.

Thank you, Jessie, for your kind letter and inquiries. I have touched upon the phenol remedy several times; but so many remedies have been proposed and afterward dropped during the past years that this matter has been before us, that I hope you will excuse me for being a little slow about recommending these new things. Besides, we have had some reports already, if I am not mistaken, saying that phenol did not answer, even when used exactly according to directions. We should be very glad indeed to have Mr. Robert Lees' report. We have seen Mr. Cheshire's book, and you will find a report of it on another page.

FROM 16 TO 65, AND 3000 LBS. OF COMB HONEY.

My pa had 165 colonies of bees a year ago, and they all died in the winter but 16; he now has 65 good ones and has 3000 lbs. of honey in 2-lb. sections. This year he raised his queens too, in little bits of hives he called mine. Pa has gone to Nebraska with 1200 lbs. of honey. He went in a covered wagon, with a four-horse team. Pa will be surprised to see my letter in GLEANINGS. This is my first letter.

BIRDIE NEEDELS, age 7.

Alanthus, Mo., Nov. 18, 1885.

Thank you for your report, friend Birdie. Your letter teaches at least one good thing;

namely, that we must never get discouraged. If we get into Blasted Hopes one year, we stand a good chance of getting out again. Your papa certainly did well to average nearly 200 lbs. of honey, besides the increase and raising his own queens.

ERNEST.

MORE ABOUT RATTLESNAKE APIARY.

After my last letter I thought I would not write again, as others write more interestingly; but your postal of Oct. 26 was a surprise and joy to me. I hope you may live many years to gladden the hearts of both adults and juveniles. We had a killing frost Nov. 28th; bees were bringing in pollen up to that date. Pa has turned the bees over to me. He said he would not have time next year to bother with them. I am going to school, and will continue to go until swarming time, April 1. My bees will not need any more attention until that time.

I went with my pa to Rattlesnake Apiary one day last week, and prepared our bees for winter by contracting the entrances and taking off one of the supers, leaving them in two-story hives, the lower story full of natural stores, with some in supers. I don't like to winter in a two-story hive. On warm days the bees go into the super, looking after the treasures there. They are either unable or unwilling to return to the cluster when the weather turns cold, and are chilled to death. The first warm day after each cold spell last winter I noticed a handful of dead bees in front of all strong colonies. By looking in the hives I found they chilled between the combs in the supers. How is it to be avoided? How shall we winter in this latitude—36°? How are we to take care of so many empty combs, without the help of the bees to clean them up during warm spells? Our home apiary, which I will call Jones-Prairie Apiary, did not do much this year. It increased from 45 to 64, and we extracted 1947 lbs. They are in fine condition. The lower story has ten full frames, with more than 1000 lbs. of nice comb honey in supers. Those that have not forgotten my report from Rattlesnake Apiary probably wish to know why 20 weak colonies, spring count, produced so much more honey than 45 strong ones. The two localities are within eight miles of each other, yet the soil and growth are as different as if they were 500 miles apart. Jones-Prairie is a gray sand, nearly all of it cultivated in corn and cotton. The country east of us for three miles to the Brazos River is a sandy timbered country. More than a thousand acres are cultivated in cotton in bee-range of our Jones-Prairie Apiary. We have never had any honey from it. I don't think cotton as a honey-plant amounts to much.

SAM. H. TERRAL.

Jones-Prairie, Tex., Dec. 1, 1885.

Friend Samuel, I do not think I would contract the entrances for winter—certainly not in your locality; and if I left combs in the upper story at all, I would fix it so the bees could not get up on to them. This, however, may not be necessary where the upper story is close, so the bees will not try to get out where they see light shining through, instead of going down through the entrance. Sometimes very strong colonies cluster partly on the lower combs and partly on the upper. In that case I should think it would do no harm. I should not think there ought to be much trouble in wintering, in any region where cotton is raised.

OUR HOMES.

Thy kingdom come. Thy will be done on earth, as it is in heaven.—MATT. 6:10.

DID it ever occur to you, dear friends, that the first petition in the prayer which our Savior gave us is, that God's kingdom may rule on earth as it rules in heaven? And as we have God's promise that our prayers shall be answered, it is certainly true that the time shall come when his will *will* be done on earth as it is in heaven. Well, is this to come about all at once, like the shock of an earthquake, or is it to be brought about by the progress of human intelligence, and by the Spirit of God moving in the hearts of men? Unquestionably, the latter way; and one who does not see evidences of the coming of this kingdom, even now at this present day, must be dull indeed.

I have just returned from the convention at Detroit, and the thoughts I have just been giving you were called forth by this national gathering. The matter first came up on the cars, in talking with a commercial traveler. Like too many others of his class, he was inclined to ridicule Christians and the Christian religion. I don't believe much in argument, as you know, especially in controversies in a public place; and although I replied to him quietly and carefully, I did not hesitate to let him know that I was a follower of Christ. As he left me he replied that it would be a glorious thing, without question, if Christians would only *hold out*, and not forget their profession and their religion. I had been answering him with texts; and my parting word was the admonition, that only "he that endureth to the end shall be saved." He smiled as I looked him full in the face while I gave him my answer, and apparently he opened his mouth to reply; but catching the glance of a passenger in the next seat, there was a little general laugh all around, and he evidently thought he might as well give it up. The Bible is equal to every and all emergencies; and if one follows its precepts, there is no danger of one getting around it or avoiding its conclusions. While talking, a nice-looking young man about the age of Ernest came up and asked if he had the pleasure of speaking with A. I. Root. As I smilingly nodded, I extended him my hand. He is a reader of GLEANINGS, and lives in Lancaster Co., Pa., and he is an earnest Christian. How I do love to see young men who are not afraid to acknowledge the Savior! We roomed together that night and the next. My acquaintance with him strengthened my faith in the idea embodied in our text. That glad time is coming; and, oh what a help these vigorous young hearts are going to be in bringing it along! The next morning I met a couple of bee-friends whom I fear have little or no faith in God, and, as a matter of course, not much in their fellow-men. What a sad, sad thing it is to lose faith in humanity, and to decide that the world is *all* hollow and deceitful!

When we reached the convention we found the hall filled, and the members seem-

ed to be in the midst of an animated discussion. That I might not interrupt, I quietly slipped into a seat by the door, proposing to go forward when there was a better opportunity. Somebody near the speaker's stand, however, caught sight of me and motioned me forward. There were Bro. Jones, Bro. Newman, of the *A. B. J.*, W. F. Clarke, friend W. Z. Hutchinson, friend Heddon, and good old father Langstroth besides. Mr. L. C. Root, of New York, whom I had never seen before, occupied the president's chair, while roundabout were the friends whom we have heard from through the journals, and read about for years. Scarcely a face was missing, unless it was that of Dr. C. C. Miller. Pretty soon W. F. Clarke stood up with a large paper box in his hand; and what do you think were my feelings when he spoke something as follows?

"Mr. A. I. Root will please stand up here before me and look me in the face."

I suppose you have heard, or had experience, of the way in which people think of a great many things while they are falling from a building, or during some great danger. Well, while I was rising to my feet and obeying orders, I thought of a great many things. I inventoried, as it were, all that I had been guilty of, to see whether there was any thing there that I might fear to have brought to light. Well, although I am bad enough as it is, I could not think of any thing that should warrant calling me up in this way for a public reprimand; so I concluded (while I inwardly thanked God that no guilty secrets lurked within my soul) that friend Clarke's "medicine" certainly could not be any thing very bad to take. Now, I can not remember what his address was, only that it was in substance something like the following:

"Bro. A. I. Root, we, the bee-keepers of North America, in recognition of your services during the years that are gone by, not only in laboring for our temporal good, but in view of the energy and zeal with which you have toiled for our spiritual good as well, do hereby tender you this beautiful book. Now, dear brother, while we say this, remember, please, we do not all of us indorse all of your peculiar doctrines, neither do we think exactly as you do on many points; but for all that, we know you have worked honestly and faithfully and unselfishly; and in view of this we take pleasure in handing to you this small testimonial of our esteem and friendship. Take it; and may God spare you to work with us for many years yet to come."

As he took his seat, he indicated, in a lower tone, that I was expected to make a speech. Now I want to say, by way of parenthesis, that, a few weeks ago, I was called upon to tell my story about Mammoth Cave, in our neighboring town of Akron, Summit Co., O. It was at a large Sunday-school convention, and of course the papers advertised me pretty well, and I had a large church pretty well filled, for an audience. The next day, the papers, in reporting a part of my talk, made the remark that "Mr. Root told the truth when he said at the outset, that he was not much of a speaker."

They did say, however, that I gave them a very pleasant conversational account of the wonders of Mammoth Cave. Well, I am afraid the friends at the National Convention thought I was not much of a speaker; but I guess they gave me credit for being honest, just as the newspaper reporter did.

I wish I could tell you what was said and done during the convention during that day, but it is utterly out of the question. The reports of the papers read, you will doubtless see. But no pen can picture the pleasant, hearty good feeling that pervaded the convention; and above all, the kindness and broad charity for each other, even in our differences, that seemed to be the prevailing spirit through it all. We went there with our hobbies, a great many of us, and we got laughed at; but we were laughed at so good naturedly, that grace was given us to laugh back again. W. F. Clarke had his hibernating-box there on the stand, and friend Heddon had his pollen theory along with him. D. A. Jones had his wonderful stock of dry jokes ready to crop out when an opening gave even half a chance. Mr. J. B. Hall, of Woodstock, Ontario, kept us roaring with his grotesque oddities, and Prof. Cook rose up once in a while (in fact, I was sorry he did not rise up oftener) and give us wise counsels and wise suggestions; and Prof. Cook has such a kind, neighborly way of telling these suggestions, or even calling us back to the right track, that no one can ever for a moment think of feeling hurt at any thing he says.

Friend Muth was there too, towering above the rest of us, and making us all feel pleasant just to look on his genial face while he read an article on the sale of extracted honey. I for one was surprised to learn that they are now using honey largely for packing and curing pork; and friend Muth stated that he had filled one order for 100 barrels, to be used solely for this purpose, besides numerous smaller orders; so you see another avenue is opening for the sale of honey. Honey has the property of answering even better than any grade of molasses that can be bought at any thing near the price.

In shaking hands with the different friends at the noon intermission, I asked one great stalwart chap his name, and he just laughed at me. "Why," said he, "I am G. M. Doolittle; and although I stayed once with you three or four days, you don't know me." I felt ashamed of myself, and no doubt blushed in confusion. But when there was such a sea of pleasant faces, and so many wanted to shake hands with "Bro. Root," I got sort o' mixed up, and scarcely knew anybody. Besides, that big book had scared me and astonished me, so that it all seemed somewhat unreal. By the way, I forgot to say that the book was a large illuminated edition of *Paradise Lost*, illustrated by Gustave Dore. Now, I am almost ashamed to say that I don't know what *Paradise Lost* is about very well; but I am going to commence reading it to my wife evenings.

Mr. L. C. Root, the president in the chair, I had never before met. Before the convention was over I had abundant reason to be

sorry that I had never met him; and, by the way, before the first day had passed I began to have a much higher opinion of a great many whom I met and heard from there than I ever heard before; and by some queer coincidence I began to have a smaller opinion of myself.

Neighbor Blakeslee once said it took the conceit out of him to go and visit his brother bee-keepers. Well, I shall have to admit that this convention took the conceit out of me in a great many ways. I was surprised and astonished, over and over again, at the masterly way in which one brother after another handled the subjects as they came up. Their experiences indicated that they had read and thought and practiced, and also that the deductions that they had drawn were based on much wisdom and common sense. The Bible says, "In the multitude of counselors there is safety," and I had a feeling that, with such meetings as this, the future of bee culture must be safe and sure. And then came every now and then a glimmer of the thought embodied in our text, that it is certainly a good and wise thing for men of great intellects to meet and compare notes and exchange ideas. I have before had strange convictions that these meetings were going to result in pleasanter feelings between the North and the South, and the East and the West, and between people of different nations and different ideas, and that through such meetings the glad millennium was to be hastened—the time when God's kingdom should come, and his will be done on earth as it is in heaven.

The number in attendance at the Antisdel Hotel was so great as to fill it to overflowing, and every room was alive with buzzing voices. It seemed like one great family reunion. The waiters eyed us a little curiously, and the newspaper men evidently didn't quite know what to make of us. In the *Evening News* of Dec. 9, appeared the following little item, which, although probably greatly exaggerated, I think has enough truth in it to cause our hearts to rejoice, and to indicate again that the promise in our text is surely coming. Here is the item:

"The bee-keepers seem to absorb something of the traditional virtues of the insect they cultivate. Those attending the convention now in session in this city stop at a temperance hotel, seldom indulge in the dissipation of a theatrical entertainment, retire early, and are strangers to the fascinations of the weed. The boy who keeps the cigar-stand at the Antisdel house, to a remark about trade, replied, 'I've sold only one cigar to the whole bee-keeping gang, and that was a five-center.'"

In the morning I was up as usual at half-past five. The clerk inquired if bee-keepers always got up at that time in the morning. I told him I did for one, and asked him if he could give me the address of the largest greenhouses in the city, and whether any of them were devoted to raising vegetables. He could not answer me directly, but by the aid of the directory he gave me some points to look up. I was the first one to go into the breakfast-room. Breakfast over, I hied for the greenhouses. The air was bright and frosty, and the half-mile walk soon made me happy. I found a beautiful greenhouse, but it was all flowers. I would very

willingly have given four dollars for an azalea growing in a small pot, were it possible for me to have got it home without injury. Were there *ever* such poinsettias, japonicas, and camelias before? The proprietor was engaged in fixing a basket of exotic flowers, intertwined with smilax, while he talked with me. May be such collections of beauties have been in sight where I was around before, but I can't remember it. One greenhouse was devoted to orchids; and even these odd-looking things had a beauty that morning that I had never seen in them before. Do you want to know why every thing seemed to be speaking of God's glory, and moving me to lift my heart to him in thanksgiving and praise? Why, I had been having a *brisk walk in the open air*. Do you remember what I said about the Peck's Pleasant apple, and the California honey? That was it — brisk, health-giving exercise out in the wintry air. Following his directions I took a street-car, away over to the other side of the city, and on my way I stopped at the central market. Here I found celery on sale, away ahead of any thing our grounds had yet produced. I looked for lettuce, and finally inquired of one of the stout German women who stood by their stands, even though the weather was down toward zero. She threw a blanket from the top of a barrel, and showed me the same kind of fringed lettuce I saw in the market in Columbus, evidently raised out of doors, protected by some sort of mulch. It seemed a little strange to me that the lettuce was kept from injury by the frost, by a simple barrel and blanket. These people at the market have learned by sad experience, just to a dot, what their vegetables will bear, and I was greatly pleased to see how they managed during such a winter morning, and also to see how they succeeded in handling choice vegetables so safely.

There was nice honey on the market, and I was pleased to see some of the finest packages labeled, "From the apiary of M. H. Hunt, Bell Branch, Wayne Co., Mich." All the honey offered for sale had the name of the producer plainly printed on the package; and from appearances I should think they were having quite a trade in the genuine article. Why can't newspaper men interview the market men, and — tell the truth?

I was told in the market that there was a man by the name of George Ferguson who had a greenhouse specially devoted to raising lettuce, and that he brought the finest lettuce into the city of any man in the market. Nobody knew exactly how far away he lived, but it was somewhere between one and four miles. It was just eight o'clock, and I started a little sadly to go back without having found a greenhouse devoted to market gardening. I mentally figured this way: Street-cars will carry me six miles an hour. Mr. Ferguson is probably not more than two miles away. Perhaps I can find him and get back before the convention opens at nine o'clock. Off I started. The driver said he knew on which street Mr. Ferguson lived. It was off from the line of street-cars, but he did not know how far off. Soon I was on foot again, in the suburbs of the

city. I found the place, as I supposed, and for the first time in my life I saw nice large heads of lettuce in the middle of the month of December. They were whiter than ordinary lettuce—in fact, almost if not quite as white as nicely bleached celery, on account of the heavy manuring they received, probably, and the confinement of the greenhouse. A boy in his teens showed me through the houses, but I was somewhat dissatisfied at the want of order and system. Finally my young friend remarked, with a touching sadness, "We used to have things looking nicer before father died." I did not feel like criticising any more. If God should see fit to take me away, would that sad remark, or a similar one, be heard around my home? May God help the widows and the fatherless! Pretty soon he said that his uncle did a good deal more at lettuce than they did. His *uncle's* name was *George Ferguson*, the man I was after, so I hadn't found the place after all. His younger brother said it was probably about a mile, but the other said it was a little further. I walked a mile, and inquired. They said it was a mile yet. Another mile, and I found a man mulching spinach. This was just what I wanted to see. After he had shown me all about it, he said my destination was *still* about a mile. Shall I go back and give it up? Fifteen minutes more time, and I shall probably find what I seek. No doubt I shall find some hint worth to me at least *thirty* minutes' time, and so I pushed on, and I got my reward, not only in seeing the beautiful lettuce, but Mr. Ferguson's wife told me that he had more orders at \$1.75 per bushel than he could possibly fill. In fact, he had gone to town now with a load hardly large enough to cut. She said, that the day before Thanksgiving he could easily have sold *forty* bushels at \$2.00 a bushel; and yet a few years ago people wouldn't buy it at all in December. The demand for such stuff is of recent date. I will tell you what else I saw. Adjoining one of the greenhouses was a warm light room for poultry. Old Izaak Walton once remarked, "Doubtless God *could* have made a better berry than the strawberry, but *doubtless* he never did." I felt like saying, "Doubtless God *might* have made a handsomer flock of Light Brahmas" than my friend the old German woman exhibited to my admiring gaze; but it seemed to me "doubtful whether God ever did" make another flock as handsome. They were cackling and singing, and laying eggs, apparently oblivious of the fact that it was the middle of December and not May. But, weren't they beauties?—spotlessly clean, covered with soft down, and of immense size, with grace and symmetry in every motion, and that kind, neighborly look (if it is proper to say a hen can have a *neighborly* look) that is so characteristic of the Light Brahmas. Do you wonder why they gave me such pleasure, that keen, frosty morning? Why, I had got loose in the fields, and had been walking briskly two or three miles across lots, climbing fences, studying God's wonders, and loving his creatures.

There was one thing about their greenhouses where I think I could have made an improvement, in raising lettuce at least.

The plants were not accurately spaced, and they did not economize the ground under the glass, when that ground was so extremely valuable. Some of the plants were nearly a foot apart, others perhaps two inches; and when plants were pulled up for market, the ground was not *at once* prepared, and more plants set out, as we do it in our green-houses. But my mission of the morning had been accomplished; I knew just how it was done, even though I had played truant a little in being "late to school." I had also seen it demonstrated that poultry can be made to do beautifully, and lay right through the winter, by a modification of the manner in which we raise plants in the winter time. Many of the poultry-journals say that artificial heat makes fowls tender, and engenders disease. I should put it this way: Artificial heat in the hands of a slipshod manager will probably engender disease and feebleness in either plants or animals. There is no success in anything without intelligent painstaking.

The time approached for me to take the train home. I asked the president for permission to say a word or two to the friends before I left. In my brief talk I closed up with the little text at the head of this talk. I then wanted to get away as quietly as possible, that I might not disturb the interest of the meeting by going out before the regular close. But, up hopped our jolly friend Jones, and proposed a recess of five minutes so that they could all shake hands with "Bro. Root" before he went away. I persisted that it was a little too much disturbance and diversion; but his motion was carried with a good deal of merriment. Now, I had already shaken hands a good many times with almost all the bee-friends there, among them quite a number with whom unpleasantness had at some time occurred. There was one brother present who had, some time before, publicly charged me with something of which I was entirely innocent. At the time he did it I wrote to him, giving him full proof of his mistake, asking him to correct it as publicly. He had never done it. Of course, I did not feel very much like shaking hands with him while he let that unjust charge stand before the bee-keeping world. While the rest were shaking hands with me before my departure, he came up too and put out his hand. I remembered at once that he had not yet recalled his untruthful accusation, but I quickly decided that it did not matter (so far as concerns *myself*) even if he never did. I had just had proof that I had as many friends — yes, a good many more, than I deserve; and what does it matter, even if *some* people do believe me greedy and unprincipled? There are plenty of others who do not. I put out my hand as pleasantly as I ever did, and gave him a hearty "God bless you, friend Blank." Now, I did not mean by this that I wished that God would prosper him in doing wrong, but I did mean that I wished that God would prosper him in all praiseworthy undertakings. My friend, did you ever pass through a similar experience?

At night I arrived at Elyria; and as I was tired and sleepy I turned eagerly toward

the first hotel in sight. After I had asked for accommodations I discovered that one-half of the hotel was a beer-saloon, and a rather hard place for a Christian at that. What should I do? Why, put up with it, and do all I could to bring about "thy kingdom come," etc. Before lying down as usual, I knelt and prayed for those I had left; and I not only prayed for the bee-keepers, and for the editors of all the bee-journals, but I prayed for the saloon-keepers as well; and before my head had touched the pillow I was astonished to find a great flood of happiness and peace pouring into my soul, and the feeling I have often mentioned before, as though invisible friends were all round about me. It was not very strange, after all. I had fought against my natural temptations, and had allowed the spirit of Christ to triumph; and suddenly there came into my mind the words of the old hymn, that I always like at such times. I began to sing the first lines, and was a little surprised to find that the words came sharp and clear to my memory, so I sang the verse all through:

Know, my soul, thy full salvation;
Rise o'er sin and fear and care;
Joy to find, in every station,
Something still to do or bear.
Think what Spirit dwells within thee;
Think what Father's smiles are thine;
Think that Jesus died to win thee;
Child of heaven, canst thou repine?

Then came delicious, health-giving sleep; and as I sank into unconsciousness it seemed to me as it never had before, perhaps, that he who has God for a friend has nothing to fear, either in life or in death.

Dear reader, these are my last words to you at the close of the year 1885. I thank you for having followed me in my humble efforts thus far; and may the blessing that only God the Father can give to his children be your portion!

EDITORIAL.

The mountains and the hills shall break forth before you into singing, and all the trees of the field shall clap their hands. — ISAIAH 55: 12.

HOW DEEP SHOULD WE PUT OUR SUB-EARTH VENTILATORS?

It depends on what we want the warm air for, I think. For a cellar for wintering bees, perhaps three or four feet is all that is necessary. If we want warm air for a cold frame to grow hardy plants, perhaps we shall need to go as deep as eight or ten feet, to get the best results; but I hardly think the temperature is higher at from 40 to 100 feet in the earth than it is down 8 or 10 feet.

SWARMING OUT IN DECEMBER.

THEY left the old hive and went as far as a quarter of a mile. It is true, the parent stock suffered some depletion, but yet there is quite a goodly number left yet. It was not bees that swarmed out, and it was not the queen, but it was the queen-clerk Lizzie, and Ernest went along with her, to start a new home. The happy couple are just now on their way to visit friends in the east; but they expect to be back in a few days, and take up their permanent abode within about a fourth of a mile of the paternal mansion, as before mentioned.

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EDITORIAL.

BEES AND BEE-KEEPING.

We have lately received a few advance copies of "Bees and Bee-keeping," by Frank Cheshire, England. The work is to be completed in 19 parts. As a treatise on the physiology and anatomy of the bee, it probably stands at the head. The engravings are very fine—a copy of one of which, with a few slight modifications, is seen in another column. So far as we have been able to notice, the writer seems to be not only a skilled microscopist but a careful observer.

ERNEST.

AN EXPERT BEE-KEEPER IN THE EMPLOY OF THE UNITED STATES.

ONE of the many treats to which we listened at the Detroit Convention was the papers from Prof. McLain, whom we have before mentioned as employed by the Government to treat disputed matters in bee culture. A very elaborate experiment was made to ascertain whether bees can puncture grapes. Not only were grapes innumerable provided, but many colonies of bees. The decision was in the negative. We are pleased to mention that friend McLain has also succeeded in fertilizing queens by mechanical means. It is true, this has been accomplished before; but the professor will probably soon be able to give directions so that any ordinary bee keeper can manage the process with but little risk of failure. We have reason to feel thankful toward the United States for having furnished the means for such experiments; and we also rejoice that they have secured the services of so able a man. He promises to furnish articles for the different bee-journals in due season.

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23, 24, Id. Mention this paper.

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318; Thompson C. E. 350; Thomson W. E. 169; Thomson G. M. 678; Thomson W. S. 319; Thorne W. B. 833; Thornton J. A. 71, 318, 373; Thornton J. W. 13; Tidball W. J. 648; Timberman M. A. 338; Tinker J. H. 352; Tisdale A. H. 344; Tishouse G. 611; Titchenall W. D. 730; Todd A. 109, 275; Tomlin T. S. 172; Tracy C. W. 643; Travillian T. S. 331; Truel and P. 136, 333; Trunkley C. M. 337; Tucker G. S. 712; Turner A. 335; Turner S. 763; Turner Viola. 351; Twilghear A. N. 783; Twining M. J. 394; 833; Twining P. E. 172; Tyler Pearl, 138; Tyrell D. M. D. 391.

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